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AUTHOR	Alkin, Marvin C.
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ABSTRACT

This collection contains one hundred seventy-four objectives and evaluation items for mathematics grades kindergarten through three. The objectives and measurement items were developed by the Instructional Objectives Exchange (IOX) staff and formulated from curricular material submitted by teachers, schools, and school districts. To date, these materials have not been used in the classroom nor have they been subjected to quality control procedures. Both the behavior aspect and the content of each objective have been selected so that the student is required to learn processes and concepts which are essential to the study of mathematics. Some objectives require the student to do no more than recall knowledge, while others require him to apply his knowledge or analyze problems. Most objectives are accompanied by four sample items which are designed to assess the student's acquisition of the desired behavior. Objectives are arranged according to ascending grade level and are organized into the following categories: sets; numbers; numerals and numeration systems; operations and their properties; measurement; geometry; relations; functions and graphs; probability and statistics; applications and problem solving; and mathematical sentences, order and logic. (FL)

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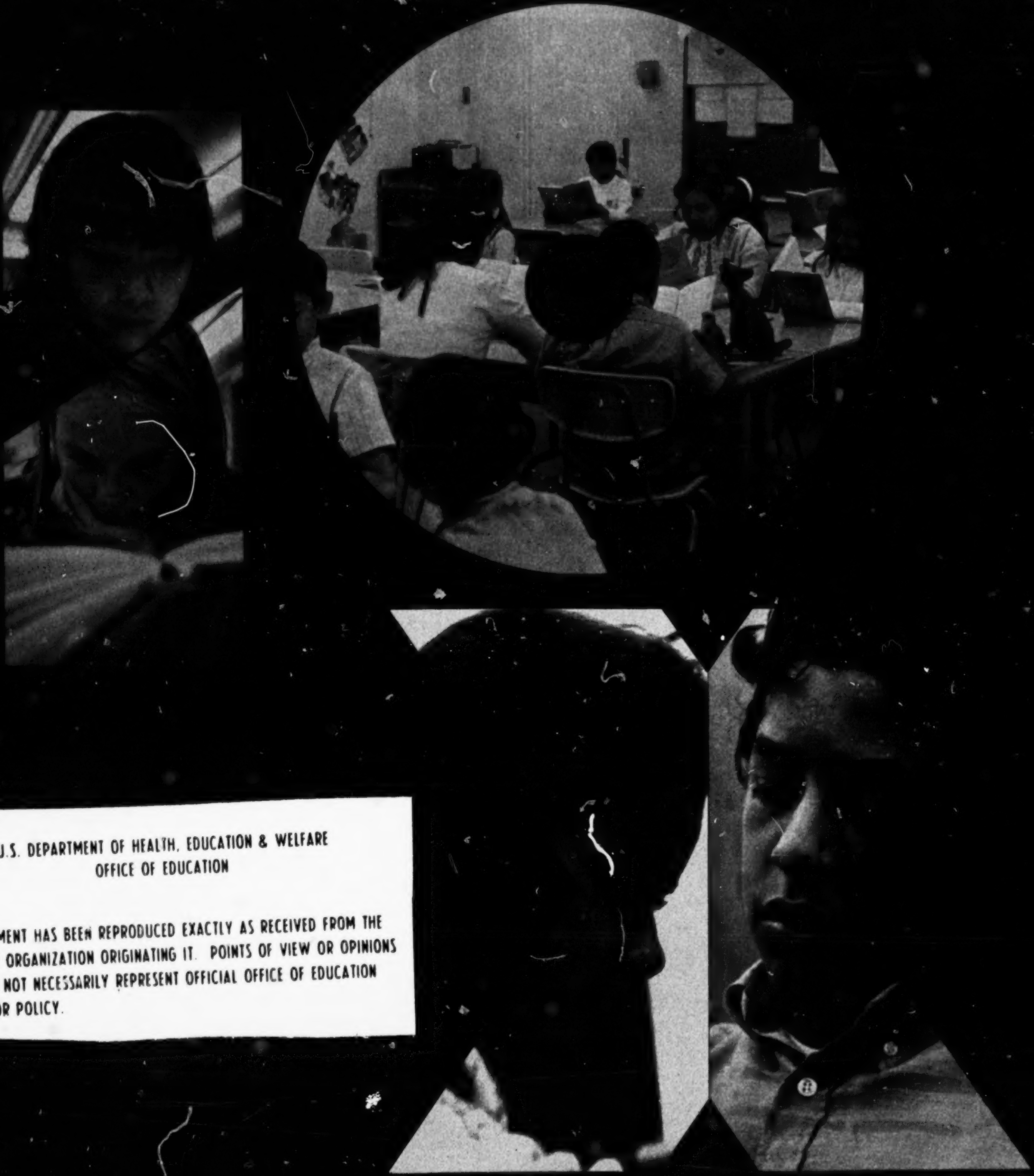
INSTRUCTIONAL OBJECTIVES EXCHANGE

Center for the Study of Evaluation



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MATHEMATICS, K-3

Marvin C. Alkin
Director

UCLA Graduate School of Education

The CENTER FOR THE STUDY OF EVALUATION (CSE) is one of nine centers for educational research and development, sponsored by the United States Department of Health, Education, and Welfare, Office of Education. Established at UCLA in June, 1966, CSE is devoted exclusively to finding new theories and methods of analyzing educational systems and programs and gauging their effects.

The Center serves its unique function with an interdisciplinary staff whose specialties combine for a broad, versatile approach to the complex problems of evaluation. Study projects are conducted in three major program areas: Evaluation of Instructional Programs, Evaluation of Educational Systems, and Evaluation Methodology and Services.

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INTRODUCTION

Objective Collections distributed by the Instructional Objectives Exchange (IOX) contain objectives and measurement items developed under the auspices of IOX. These objectives were based either upon curricular material submitted to the Exchange by a teacher, school, or school district, or they were generated by the IOX staff.

Purpose

It is the belief of the Exchange that it will be easier for the busy teacher or administrator to select from among objectives, and to generate only a very few, than it would be for him to formulate an entire set of behavioral objectives and measurement items.

There is no attempt to dictate curriculum through this service. Rather, the goal of the Exchange is to expedite the user's selection of his own objectives.

The user may select from among these objectives those which are consistent with his own curricular goals. In addition, he may generate objectives to fill gaps which he perceives to exist within the set of objectives as they have been developed.

In many cases, there will be more objectives contained within each Collection than an individual teacher or district will wish to use in a particular instructional situation. In other cases, there may be objectives which the individual teacher feels are important, but which are not included in the Objective Collection.

Contents

Different Objective Collections will vary as to the number of measures which have been developed to assess the attainment of an objective. In some cases, there is a pool of items (usually six). In others, there is only one sample item per objective. In a very few cases, there are no items at all. Though it is the Exchange's intention to supply a pool of items with which to assess each-objective, it has not yet been able to accomplish this goal. As additional items are developed, however, their availability will be made known through the publication of IOX Catalogs.

Differences may be noted in the construction of "correct responses" to specific items developed to assess an objective. In some cases, the Exchange has provided "answers." These serve in instances where a single, correct answer is possible. For example, in mathematics items there often exists only one answer that can be considered correct.

In other cases, the Exchange has included as the "correct response" not a specific "answer," but what are called "criteria for judging the correctness of a response." In these instances, a particular behavior i being taught in which answers may differ, one from the other, and still be considered correct. However, though there is no single correct response, this does not mean that *any response* is correct. For this reason, criteria are provided by means of which the acceptability of a learner's answer can be judged. An example of this is found in the Collection of English literature objectives, wherein the process of evaluating a poem permits different answers which can be judged in terms of internal evidence to be found in the poem itself.

As the Instructional Objectives Exchange continues to develop, it is anticipated that the user will be provided with classifications of objectives in each Collection. For example, many objectives can be classified as to whether they call for learner responses at a higher rather than lower cognitive level. Further, as users supply the Exchange with preference data, the degree of preference per objective reflected by various educational groups, can be presented. These and other classification schemes will be forthcoming in future IOX publications.

Grade level recommendations for particular Collections have been supplied by contributors and should not necessarily be followed by users who consider other grade or age levels more appropriate for their own situation.

Quality Control

The objectives and items contained in this Collection have been adapted from curricular material contributed to the Exchange and, generally, have not been used in their present form in the classroom. The names of the contributors can be found on the acknowledgements page.

In the future, IOX anticipates that objectives and measures distributed will have been subjected to rigorous quality control procedures, such as the following: the material itself will be evaluated in the classroom; subject matter experts will examine the objectives and items in terms of whether given units include all essential or important aspects of the course under consideration; teachers will assess the unit objectives to determine whether they constitute goals feasible for groups of children in the classroom; teachers will report under what special conditions they believe the material can be most effective. Such information will be collated and made available to users. Furthermore, the objectives and measures will incorporate suggestions and improvements derived from their use.

Feedback

At the present time, however, the material is being distributed without these quality control procedures. The principal reason for this is the Exchange's desire to satisfy immediate needs of classroom teachers. Moreover, there is an additional advantage to this procedure. It will provide the Exchange with information about actual classroom use of this material. To this end, the pages immediately following the introductory material contain a questionnaire, designed to supply the Exchange with information related to the above control procedures. IOX would greatly appreciate your cooperation in this matter. *Please remove the questionnaire pages and return them after you have examined or, preferably, actually used the contents of this booklet.*

The Exchange solicits your patience as you examine these early materials so that the system can, in time, be updated and improved. This first effort, albeit primitive, starts the cycle toward a continually improving collection of instructional objectives which, hopefully, can be of considerable utility to the nation's educators.

The Mathematics Collection

This Collection contains 174 objectives and related evaluation items for math, grades kindergarden to three. It is organized into the following categories: sets; numbers, numerals and numeration systems; operations and their properties; measurement; geometry; relations, functions and graphs; probability and statistics; applications and problem solving; and mathematical sentences, order and logic. The objectives in each category are arranged, in terms of ascending grade level.

Each objective in the Collection contains four elements; (1) the objective, (2) measurement items, (3) means for judging the adequacy of student responses, and (4) an IOX rating.

The objective itself is stated in operational terms, and is identified by a Category and a Sub-Category, which serve to limit and define it. The behavioral aspect as well as the content of the objective have been carefully selected so that the student is required to master processes and concepts which are structural to the discipline of math. The total Collection requires the acquisition of a wide range of behaviors. A few objectives require no more from the student than that he be able to recall knowledge, while other objectives require the student to apply his knowledge, or to analyze or synthesize given problems.

The majority of the objectives are accompanied by four sample items, each of which is designed to test the student's acquisition of the desired behavior. In most cases, a correct answer to the problem has been provided. However, there are instances where a single correct answer is impossible to supply. In these cases, either sets of possible answers or suggested criteria for evaluating the student's answer have been provided.

All objectives included here have been rated by participants of the 1969 IOX Summer Institute for the Preparation of Instructional Objectives. Ratings ranging from 1 (acceptable) to 5 (unacceptable) were given according to whether the objective should be retained in the IOX Collection. *Ratings should not be interpreted as an estimate of the worth of an objective.* Objectives rated 4 or 5 were eliminated from the present Collection.

Acknowledgements

While the objectives and items contained in this Collection have been developed by the Staff of the Instructional Objectives Exchange, much of the material is based upon contributions made by the following school districts:

Clark County School District, Las Vegas, Nevada
Bucks County Public Schools, Doylestown, Pennsylvania
Department of Public Instruction, Harrisburg, Pennsylvania
Cajon Valley Union School District, El Cajon, California
Frederick County Public Schools, Frederick, Maryland
Winnetka Public Schools, Winnetka, Illinois
School City of Gary, Gary, Indiana

The following individuals added to, refined and rated the material:

Brother Arthur Indelicato
De La Salle High School, Minneapolis, Minnesota

Mrs. Yuriko Abe
Los Angeles City Schools, California

Miss Chizuko Sakuma
Los Angeles City Schools, California

Miss Lois Barth
Long Beach Unified School District, California

Mrs. Sally Cardarelli
Liverpool, New York

Mr. Robert Geurts
Kentfield School District, California

Mrs. Phyllis Thom
Palos Verdes Unified School District, California

Mr. Paul V. Wilcox
Los Alamos Public Schools, New Mexico

The Instructional Objectives Exchange genuinely appreciates the significant contributions of these school districts and individuals.

To the User:

In order to improve the quality of our Collections of objectives and test items, we must have feedback from our users. We anticipate that this and other Collections will be used by both teachers and administrators, which means they will be utilized in various ways. However, some aspects of the objectives and related test items are important regardless of the user's intent, and we would like to evaluate this Collection with respect to those dimensions. With this in mind, we ask that you take a few minutes to complete and return the following questionnaire.

Part I of the questionnaire requests information which identifies the user's interest in the Collection. This is important and should be completed by everyone. Parts II and III relate to the objectives and test items, respectively, and should also be completed by all users. Part IV goes into greater detail than the preceding parts, and is optional.

We strongly urge that you look at the questionnaire *now* so that you may jot down pertinent comments while you are using the Collection. Then complete the questionnaire and return it as soon as possible after the use of the Collection. Your cooperation in this matter is extremely valuable and is greatly appreciated.

INSTRUCTIONAL OBJECTIVES EXCHANGE USER QUESTIONNAIRE

Part I: USER information--Please complete the following:

1. Title of Collection: ____________________
2. Name: ____________________ Position: ____________________
3. School: ____________________
4. School District: ____________________
5. City: ____________________ State __________ Zip __________
6. Grade level(s) of class(es) using the Collection: ____________________
7. Please check the ability level(s) of the class(es) using the Collection:

☐ below average ☐ average ☐ above average

Part II: INSTRUCTIONAL OBJECTIVES Information--Please check or fill in where appropriate:

1. a. Overall, to what extent are the objectives useful to you?

☐ not useful ☐ somewhat useful ☐ highly useful

b. If not useful, why? ____________________

____

2. a. Overall, to what extent are the objectives too specific or too general?

☐ too specific ☐ just about right ☐ too general

b. Can you give examples (by objective number) of objectives which are:

(1) too specific? ____________________

(2) too general? ____________________

3. a. Overall, to what extent did your students find the objectives difficult?

☐ too easy ☐ just about right ☐ too difficult

b. Can you give examples (by objective number) of objectives which are:

(1) too easy? ____________________

(2) too difficult? ____________________

(OVER)

Part III: TEST ITEM Information--Please check or fill in where appropriate:

1. a. Overall, to what extent do the test items measure the objectives?

   ☐ not well ☐ somewhat ☐ very well

   b. Can you give examples (by objective and item number) of test items which do not measure the objective?______________________________

2. a. Overall, did your students have difficulty reading test items?

   ☐ yes ☐ no

   b. Can you give examples (by objective and item number) of items which are difficult to read?______________________________

3. a. Overall, how helpful are the 'criteria' provided for evaluating answers to items?

   ☐ not helpful ☐ somewhat helpful ☐ very helpful

   b. Can you identify factors to make the criteria more useful?

   ____

   ____

   ____

4. Do you have any additional suggestions with respect to this particular Collection or the general operation of the Instructional Objectives Exchange?

On the following page you will find additional, more explicit questions. If you have time to answer them, your contribution to the improvement of IOX will be greatly increased.

Please mail the completed questionnaire and as much additional information as your time permits to:

QUESTIONNAIRE
INSTRUCTIONAL OBJECTIVES EXCHANGE
Center for the Study of Evaluation
UCLA Graduate School of Education
Los Angeles, California 90024

Part IV: ADDITIONAL Questionnaire Information

These questions require more time to answer than those on the previous page. They are extremely important, however, and any time you can spare to respond to them will be greatly appreciated. Please return this page with the completed questionnaire.

Thank you for your time and effort.

Name: ________________________________

School: ______________________________

1. Please list by objective number in the space below all the objectives you actually used.

2. Are there any objectives which should be deleted from the Collection? If so, please list them (by objective number) and state why they should be removed.

(OVER)

3. Please list (by objective and item number) any test items which do not accurately measure their objectives or which are otherwise in error. If possible, briefly describe the error.

4. Please describe any important objectives or concepts which do not appear in the Collection. Use an additional sheet of paper if necessary.

Please mail the completed questionnaire and as much additional information as your time permits to:

QUESTIONNAIRE
INSTRUCTIONAL OBJECTIVES EXCHANGE
Center for the Study of Evaluation
UCLA Graduate School of Education
Los Angeles, California 90024

IOX Acceptability Rating: 1 Math

Objective 1 Grade K

MAJOR CATEGORY: Sets

SUB-CATEGORY: Empty Sets (Null Set)

OBJECTIVE: Given sets on a flannel board, the student will form the empty set by removing all the set objects for the empty set.

SAMPLE ITEMS:

Visual cue on flannel board {○, ○, ○} Answer: Child will remove objects from flannel board. ITEM 1	Visual cue on flannel board {□, □, □, □, □} Answer: Child will remove objects from flannel board. ITEM 2
Visual cue on flannel board {△, △, △, △} Answer: Child will remove objects from flannel board. ITEM 3	Visual cue on flannel board {□, △, ○, ◊, Φ} Answer: Child will remove objects from flannel board. ITEM 4

IOX Acceptability Rating: 1 Math

Objective 2 Grade K - 3

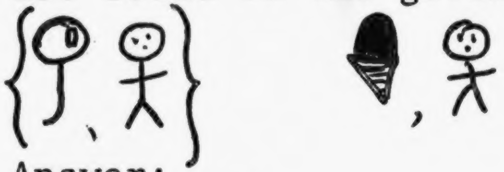
MAJOR CATEGORY: Sets

SUB-CATEGORY: Elements

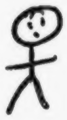
OBJECTIVE: Given a set of elements and a pictorial representation which includes both elements of the set and objects not in the set, the student will identify those elements which are members of the set by circling them.

SAMPLE ITEMS:

Circle the elements which are found in the given set.



Answer:



ITEM 1

Circle the elements which are found in the given set.

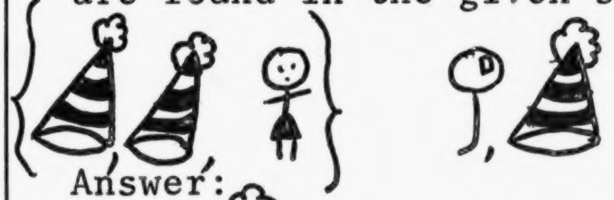
{○, □, △} {○, △, ☆}

Answer:

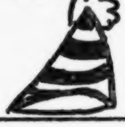
○, △

ITEM 2

Circle the elements which are found in the given set.

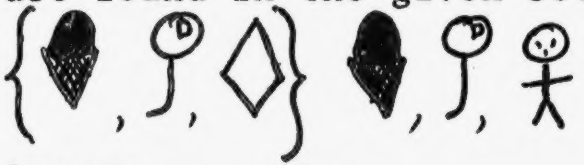


Answer:

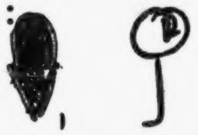


ITEM 3

Circle the elements which are found in the given set.



Answer:



ITEM 4

IOX Acceptability Rating: 1 Math

Objective 3 Grade K

MAJOR CATEGORY: Sets

SUB-CATEGORY: Equivalent and Non-Equivalent Sets

OBJECTIVE:	Given two non-equivalent sets, the student will identify the set which has more members and the set which has fewer members by drawing circles around the required set.

SAMPLE ITEMS:

Draw a circle around the set which has fewer members. {□} , {△,△} Answer: {□} ITEM 1	Draw a circle around the set which has fewer members. {▭,▭,▭} {⌓,⌓} Answer: {⌓,⌓} ITEM 2
Draw a circle around the set which has more members. {○,○},{⌓,⌓,⌓} Answer: {⌓,⌓,⌓} ITEM 3	Draw a circle around the set which has more members. {▽,▽,▽,▽},{▽,▽} Answer: {▽,▽,▽,▽} ITEM 4

IOX Acceptability Rating: 1 Math

Objective 4 Grade K

MAJOR CATEGORY: Sets

SUB-CATEGORY: Union

OBJECTIVE:	Given several sets, the student will draw the union of these sets.

SAMPLE ITEMS:

Draw the union of the two sets. {△},{□} Answer: {△,□} ITEM 1	Draw the union of the three sets. {◡},{◠},{◡, ◠} Answer: {◡, ◠, ◡, ◠} ITEM 2
Draw the union of the four sets {△} ,{△,△} ,{△}, {△,△} Answer: {△,△,△,△,△,△} ITEM 3	Draw the union of the five sets. {X}, {X,X}, {X}, {O}, {O,O} Answer: {X,X,X,X,O,O,O} ITEM 4

IOX Acceptability Rating: 1

Math

Objective 5

Grade K-3

MAJOR CATEGORY: Sets

SUB-CATEGORY: Equivalent and Non-Equivalent Sets

OBJECTIVE: Given a group of pairs of sets, the student will distinguish between those pairs which are non-equivalent and those which are equivalent by circling the pairs of equivalent sets.

SAMPLE ITEMS:

Circle the pairs of equivalent sets. a. {□,□}, {△,△} b. {▽,▽}, {D} c. {O,O,O}, {X,X,X} Answer: a, c ITEM 1	Circle the pairs of equivalent sets. a. {□},{O} b. {▽,▽},{O,O} c. {△,△,△},{D,D,D} Answer: a, b, c ITEM 2
Circle the pairs of equivalent sets. a. {O,O,O}; {O} b. {□} , {O,O,O} c. {△,△} , {△,△,△} Answer: NONE ITEM 3	Circle the pairs of equivalent sets. a. {△}, {△} b. {▽}, {O,O} c. {⊖}, { } Answer: a ITEM 4

IOX Acceptability Rating: 1

Objective 6

Math

Grade K - 3

MAJOR CATEGORY: Sets

SUB-CATEGORY: Equal Sets

OBJECTIVE: Given several sets, the student will identify the equal sets by circling them.

SAMPLE ITEMS:

Circle the equal sets.

a. {△, △}, {△, △}

b. {△}, {○, ○}

c. {○, ○}, {⌓, ⌓, ⌓}

Answer:

a. {△, △}, {△, △}

ITEM 1

Circle the equal sets.

a. {△}, {△, △}

b. {○}, {○, ○}

c. {□, □}, {□, □}

Answer:

c. {□, □}, {□, □}

ITEM 2

Circle the equal sets.

a. {□, □}, {□}

b. {△, △, △}, {△, △, △, △}

c. {○, ○, ○}, {○, ○, ○}

Answer:

c. {○, ○, ○}, {○, ○, ○}

ITEM 3

Circle the equal sets.

a. {□}, {□, □ □}

b. {△}, {△, △}

c. {⌓, ⌓, ⌓, ⌓}, {⌓, ⌓, ⌓, ⌓}

Answer:

c. {⌓, ⌓, ⌓, ⌓}, {⌓ ⌓ ⌓ ⌓}

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 7 Grade K-3

MAJOR CATEGORY: Sets

SUB-CATEGORY: Subsets

OBJECTIVE: Given several sets, the student will identify the subset by circling it.

SAMPLE ITEMS:

Circle the subset or subsets of the given set. {△,△}, {○}, {△},{□} Answer: {△} ITEM 1	Circle the subset or subsets of the given set. {□,□,□}, {□,□}, {○}, {□} Answer: {□,□},{□} ITEM 2
Circle the subset or subsets of the given set. {□,○,○}, {○},{□},{○,○} Answer: {○}, {□},{○,○} ITEM 3	Circle the subset or subsets of the given set. {□,△}, {○}, {x}, {△} Answer: {△} ITEM 4

IOX Acceptability Rating: 1 Math

Objective 8 Grade K - 3

MAJOR CATEGORY: Sets

SUB-CATEGORY: One-to-one Correspondence

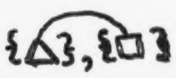
OBJECTIVE: Given a pair of equivalent sets, the student will indicate a one-to-one matching between members of these sets by constructing lines.

SAMPLE ITEM:

Draw lines between the members of each set.

{△},{□}

Answer:

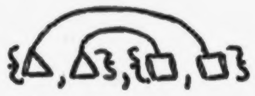


ITEM 1

Draw lines between the members of each set.

{△,△},{□,□}

Answer:

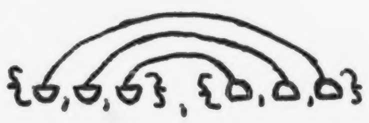


ITEM 2

Draw lines between the members of each set.

{▽,▽,▽},{△,△,△}

Answer:

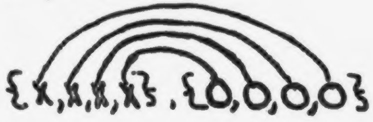


ITEM 3

Draw lines between the members of each set.

{x,x,x,x},{O,O,O,O}

Answer:



ITEM 4

IOX Acceptability Rating: 1
Math

Objective 9
Grade K-3

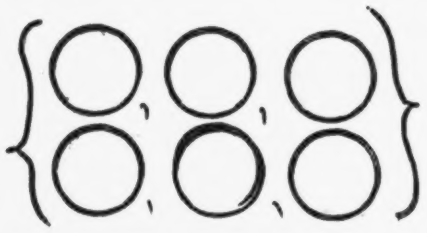
MAJOR CATEGORY: Sets

SUB-CATEGORY: Sets with Cardinal Numbers of 1 - 10

OBJECTIVE: Given a group of non-equivalent sets in random order, the student will demonstrate his understanding of cardinal numbers by writing the correct cardinal number under each set.

SAMPLE ITEMS:

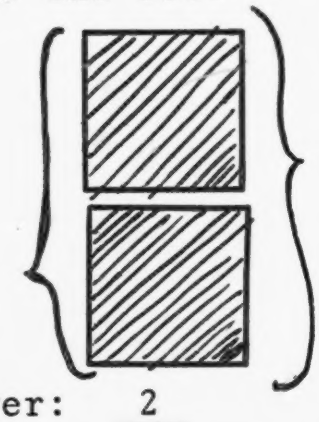
Write the cardinal number below the set.



Answer: 6

ITEM 1

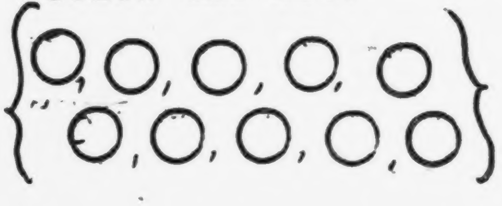
Write the cardinal number below the set.



Answer: 2

ITEM 2

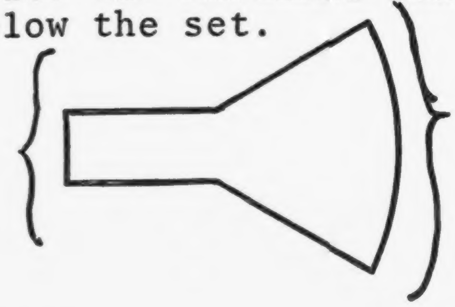
Write the cardinal number below the set.



Answer: 10

ITEM 3

Write the cardinal number below the set.



Answer: 1

ITEM 4

IOX Acceptability Rating: 1

Objective 10

Math

Grade 1 - 3

MAJOR CATEGORY: Sets

SUB-CATEGORY: Empty Set (Null Set)

OBJECTIVE: Given a group of sets, the student will identify the empty set by circling it.

SAMPLE ITEMS:

Circle the empty set.

a. {△, △}

b. { }

c. {△}

Answer: b

ITEM 1

Circle the empty set.

a. { }

b. {△}

c. {△, △, △}

Answer: a

ITEM 2

Circle the empty set.

a. birds that fly

b. cows that fly

c. rabbits that hop

Answer: b

ITEM 3

Circle the empty set.

a. {○, △, ▽}

b. {△, △, △}

c. { }

Answer: c

ITEM 4

IOX Acceptability Rating: 1

Objective 11

Math

Grade 1-3

MAJOR CATEGORY: Sets

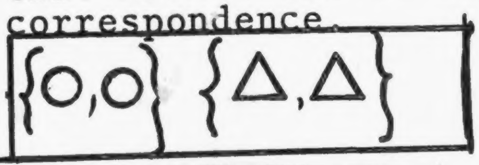
SUB-CATEGORY: One-to-one Correspondence

OBJECTIVE: Given pairs of sets, the student will identify which pairs have a one-to-one correspondence.

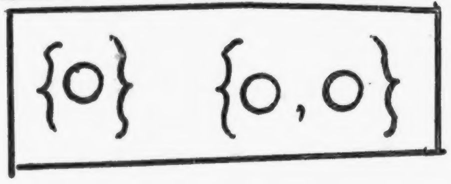
SAMPLE ITEMS:

Circle the pair of sets that have a one-to-one correspondence.

a.



b.

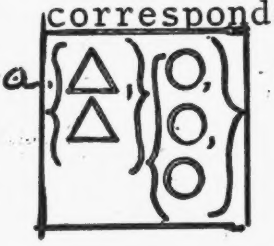


Answer: a.

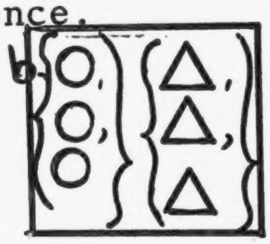
ITEM 1

Circle the pair of sets that have a one-to-one correspondence.

a.



b.

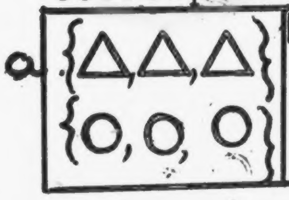


Answer: b.

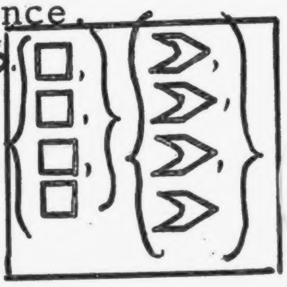
ITEM 2

Circle the pair of sets that have a one-to-one correspondence.

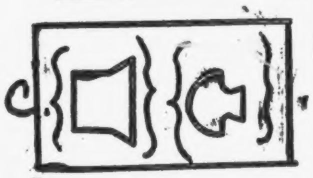
a.



b.



c.



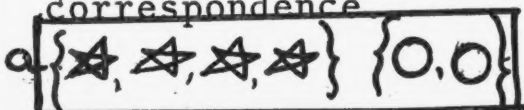
Answer:

a. b. c.

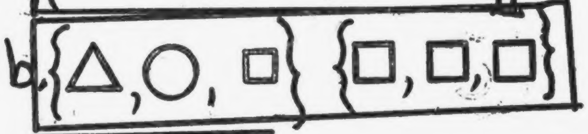
ITEM 3

Circle the pair of sets that have a one-to-one correspondence.

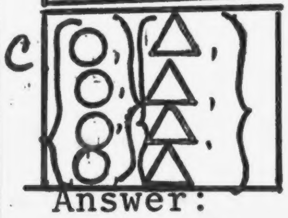
a.



b.



c.



Answer:

b. c.

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 12 Grade 1 - 3

MAJOR CATEGORY: Sets

SUB-CATEGORY: Union

OBJECTIVE: Given two disjoint sets, the student will form the union set and state its cardinal number.

SAMPLE ITEMS:

Draw the union of the two sets and write its cardinal number.

{□,□,□} ∪ {△,△,△}

Answer: {□,□,□,△,△,△}

6

ITEM 1

Draw the union of the two sets and write its cardinal number.

{▽,▽,▽} ∪ {⌓,⌓,⌓,⌓}

Answer: {▽,▽,▽,⌓,⌓,⌓,⌓}

7

ITEM 2

Draw the union of the two sets and write its cardinal number.

{X,X,X,X} ∪ {O,O,O,O}

Answer: {X,X,X,X,O,O,O,O}

8

ITEM 3

Draw the union of the two sets and write its cardinal number.

{*,*,*,*,*,*,*} ∪ {□,□}

Answer: {*,*,*,*,*,*,*,□ □}

9

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 13 Grade 1 - 3

MAJOR CATEGORY: Sets

SUB-CATEGORY: Intersection (Common Elements)

OBJECTIVE: Given two sets, the student will identify those elements which are common to both sets.

SAMPLE ITEMS:

List the elements that are common to both sets. {1, 2, 3, 4,}, {1, 3, 5, 6, 7} Answer: 1, 3 ITEM 1	List the elements that are common to both sets. {△, □, ⏢}, {▱, ▯, △} Answer: △ ITEM 2
List the elements that are common to both sets. {▽ ▭, ▯, ○} {□, ⏢, ▭, ▽} Answer: ▽, ▭ ITEM 3	List the elements that are common to both sets. {A, B, C, D, E} {H, G, F, E, D} Answer: E, D ITEM 4

IOX Acceptability Rating: 1

Objective 14

Math

Grade 2 - 3

MAJOR CATEGORY: Sets

SUB-CATEGORY: Equivalent Sets

OBJECTIVE: Given any set, the student will construct a set equivalent to it.

SAMPLE ITEMS:

Construct a set equivalent to the given set.

Given: {▵, ▵, ▵}

Possible Answer: {△, △, △}

ITEM 1

Construct a set equivalent to the given set.

Given: {▭, ▭, ▭, ▭}

Possible Answer: {□, □, □, □}

ITEM 2

Construct a set equivalent to the given set.

Given: {a, b, c, d}

Possible Answer: {A, B C, D}

ITEM 3

Construct a set equivalent to the given set.

Given: {All the days of the week}

Possible Answer:
{1, 2, 3, 4, 5, 6, 7}

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 15 Grade 3

MAJOR CATEGORY: Sets

SUB-CATEGORY: Equivalent Sets

OBJECTIVE: Given several sets, the student will pair those sets that are equivalent.

SAMPLE ITEMS:

Pair those sets that are equivalent.

A. {△, △, △}

B. {○, ○, ○, ○}

C. {◠, ◠, ◠}

D. {□, □}

E. {▭, ▭, ▭, ▭}

Answer: A, C
B, E

ITEM 1

Pair those sets that are equivalent.

A. {□, □}

B. {a, b, c}

C. {△, △, △}

D. {◡}

E. {x, x}

Answer: A, E
B, C

ITEM 2

Pair those sets that are equivalent.

A. {Bill, Tom, Jack}

B. {u, v, w, x, y, z}

C. {x, x, x}

D. {1, 2, 3, 4, 5, 6}

E. All the days of the week

Answer: A, C
B, D

ITEM 3

Pair those sets that are equivalent.

A. {All the days of the week}

B. {◡, ◡, ◡, ◡, ◡, ◡, ◡}

C. {1, 2}

D. {x, x}

E. {□, □, □}

Answer: A, B
C, D

ITEM 4

IOX Acceptability Rating: 1

Objective 16

Math

Grade 3

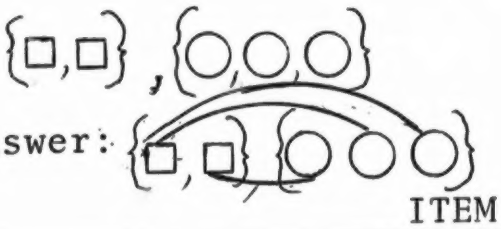
MAJOR CATEGORY: Sets

SUB-CATEGORY: One-to-many

OBJECTIVE: Given two sets of which the second has more members than the first, the student will match with a member in the first set one or more members in the second.

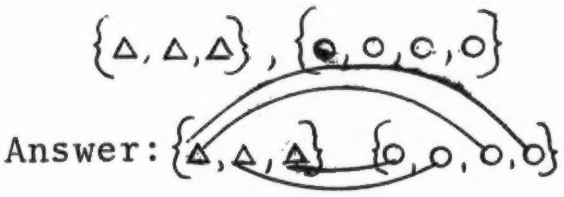
SAMPLE ITEMS:

Match each member in the first set with one or more members in the second set by drawing lines.



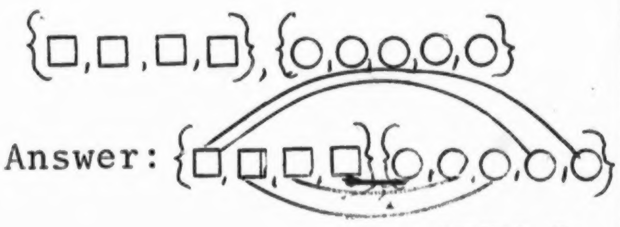
ITEM 1

Match each member in the first set with one or more members in the second set by drawing lines.



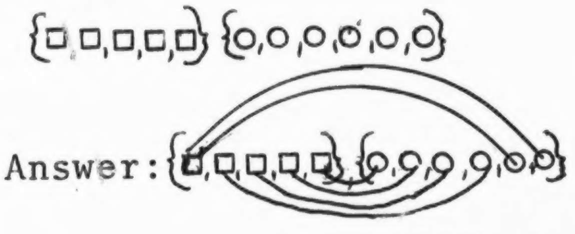
ITEM 2

Match each member in the first set with one or more members in the second set by drawing lines.



ITEM 3

Match each member in the first set with one or more members in the second set by drawing lines.



ITEM 4

IOX Acceptability Rating: 1 Math
Objective 17 Grade 3

MAJOR CATEGORY; Sets

SUB-CATEGORY: Cross product (ordered pairs)

OBJECTIVE: Given two sets, the student will list the cross product (the set of ordered pairs).

SAMPLE ITEMS:

Write the set of ordered pairs of the two given sets. $\{1, 2\}, \{3, 4\}$ Answer: $\left\{\begin{matrix}(1, 3), (1, 4),\\ (2, 3), (2, 4)\end{matrix}\right\}$ ITEM 1	Write the set of ordered pairs of the two given sets. $\{1, 2, 3\}, \{6, 7\}$ Answer: $\left\{\begin{matrix}(1, 6), (1, 7),\\ (2, 6), (2, 7),\\ (3, 6), (3, 7)\end{matrix}\right\}$ ITEM 2
Write the set of ordered pairs of the two given sets. $\{7, 8, 9\}, \{4, 5, 6\}$ Answer: $\left\{\begin{matrix}(7, 4), (7, 5),\\ (7, 6). (8, 4),\\ (8, 5), (8, 6),\\ (9, 4), (9, 5),\\ (9, 6)\end{matrix}\right\}$ ITEM 3	Write the set of ordered pairs of the two given sets. $\{3, 4\}, \{6, 7, 8, 9\}$ Answer: $\left\{\begin{matrix}(3, 6), (3, 7).\\ (3, 8). (3, 9),\\ (4, 6), (4, 7),\\ (4, 8), (4, 9)\end{matrix}\right\}$ ITEM 4

IOX Acceptability Rating: 1

Math

Objective 18

Grade 3

MAJOR CATEGORY: Sets

SUB-CATEGORY: Finite and Infinite

OBJECTIVE: Given a set, the student will state whether it is finite or infinite.

SAMPLE ITEMS

Is the following set finite or infinite? {1, 2, 3, 4, 5, ...} Answer: Infinite ITEM 1	Is the following set finite or infinite? {a, b, c, d, ...} Answer: Finite ITEM 2
Is the following set finite or infinite? {students in class} Answer: Finite ITEM 3	Is the following set finite or infinite? { } Answer: Finite ITEM 4

IOX Acceptability Rating: 1

Math

Objective 19

Grade K

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Cardinal Numbers

OBJECTIVE; Given any verbal or written numeral, the student will construct and identify sets containing the same amount of members.

SAMPLE ITEMS:

Draw a set of 3 balls Answer: {○, ○, ○} ITEM 1	Draw a set of 4 squares Answer: {□, □, □, □} ITEM 2
Draw a set of 5 triangles Answer: {△, △, △, △, △} ITEM 3	Draw a set of 6 rectangles Answer {▭, ▭, ▭, ▭, ▭, ▭} ITEM 4

IOX Acceptability Rating: 1

Math

Objective 20

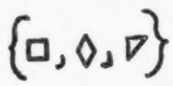
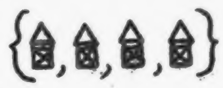
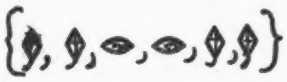
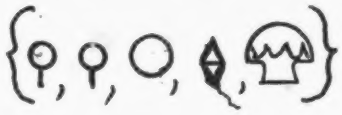
Grade K

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Cardinal Numbers

OBJECTIVE: Given a set of elements, the student will identify the cardinal number of the set.

SAMPLE ITEMS:

Write how many objects are in the set.  Answer: 3 ITEM 1	Write how many objects are in the set.  Answer: 4 ITEM 2
Write how many objects are in the set.  Answer: 6 ITEM 3	Write how many objects are in the set.  Answer: 5 ITEM 4

IOX Acceptability Rating: 1

Objective 21

Math

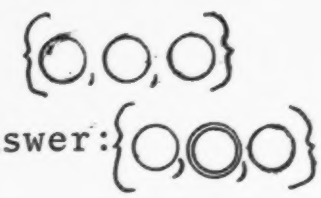
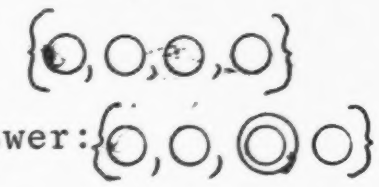
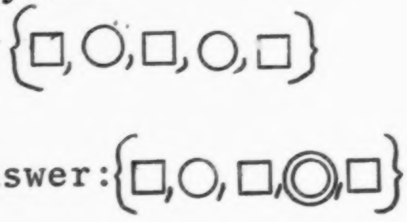
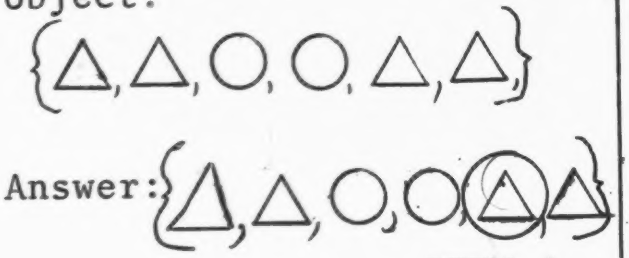
Grade K

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Ordinal Numbers

OBJECTIVE: Given a sequence of objects, the student will identify the ordinal position of a specific object.

SAMPLE ITEMS:

Circle the second object.  Answer: ITEM 1	Circle the third object.  Answer: ITEM 2
Circle the fourth object.  Answer: ITEM 3	Circle the fifth object.  Answer: ITEM 4

IOX Acceptability Rating: 1

Objective 22

Math

Grade K - 3

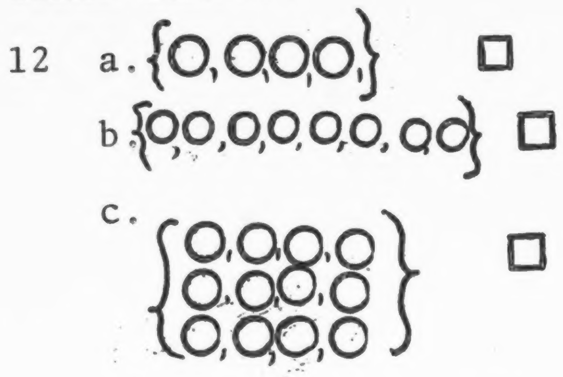
MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Cardinal Number

OBJECTIVE: Given a cardinal number, the student will mark with an x the set associated with the cardinal number.

SAMPLE ITEMS:

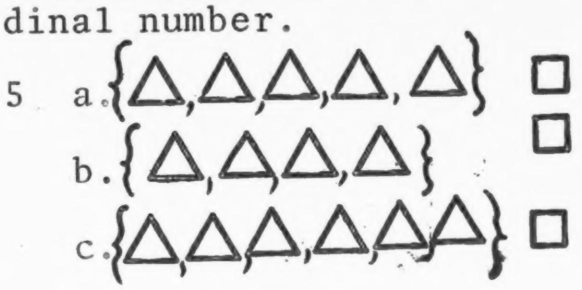
Mark an x in the ☐ next to the set associated with the cardinal number.



Answer: c

ITEM 1

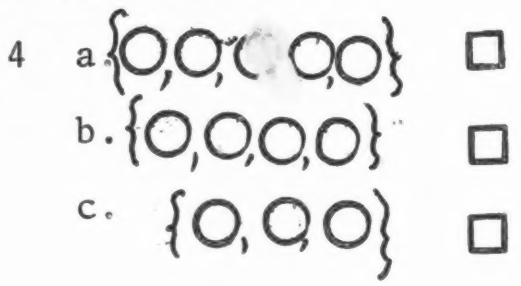
Mark an x in the ☐ next to the set associated with the cardinal number.



Answer: a

ITEM 2

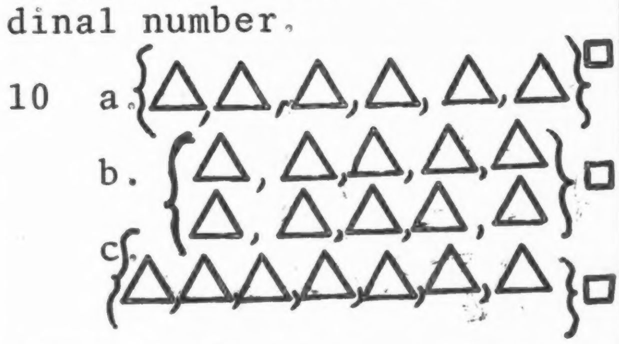
Mark an x in the ☐ next to the set associated with the cardinal number.



Answer: b

ITEM 3

Mark an x in the ☐ next to the set associated with the cardinal number.



Answer: b

ITEM 4

IOX Acceptability Rating: 1

Math

Objective 23

Grade K - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Ordinal Numbers

OBJECTIVE: Given a sequence of objects, events, etc., the student will identify the position in space or time of a particular object by naming the corresponding ordinal number.

SAMPLE ITEMS:

Name the following object with the correct ordinal number.

{△, ○, □}

○ is ________

Answer: second

ITEM 1

Name the following object with the correct ordinal number.

{○, ⊗, ●}

● is ________

Answer: third

ITEM 2

Name the following object with the correct ordinal number.

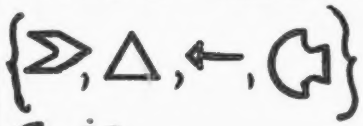
{▨, □, ■}

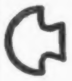
▨ is ________

Answer: first

ITEM 3

Name the following object with the correct ordinal number



 is ________

Answer: fourth

ITEM 4

IOX Acceptability Rating: 1

Math

Objective 24

Grade 1 - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Cardinal Numbers

OBJECTIVE: Given a non-empty set, the student will write the cardinal number which represents the number of elements in the set.

SAMPLE ITEMS:

Write the number of elements there are in the set.

$\{\triangle,\triangle,\triangle,\triangle,\triangle,\triangle\}$ ____

Answer: 6

ITEM 1

Write the number of elements there are in the set.

$\{\circ,\circ,\circ,\circ\}$ ____

Answer: 4

ITEM 2

Write the number of elements there are in the set.

$\{\triangle,\triangle,\triangle,\triangle,\circ,\circ,\circ,\circ\}$

____

Answer: 8

ITEM 3

Write the number of elements there are in the set.

$$\left\{\begin{matrix}\circ,\circ,\circ\\ \circ,\circ,\circ\\ \circ,\circ,\circ\end{matrix}\right\}$$

Answer: 9

ITEM 4

IOX Acceptability Rating: 1

Math

Objective 25

Grade 1 - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Names

OBJECTIVE: Given the numeral representation for a whole number, the student will write the number word.

SAMPLE ITEMS:

Write the correct number word. 5 = Answer: five ITEM 1	Write the correct number word. 6 = Answer: six ITEM 2
Write the correct number word. 7 = Answer: seven ITEM 3	Write the correct number word. 8 = Answer: eight ITEM 4

IOX Acceptability Rating: 1

Objective 26

Math

Grade 1 - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Names for Numbers

OBJECTIVE: Given a number, the student will write different numerals which when added together or subracted from each other give the same number.

SAMPLE ITEMS:

Fill in the appropriate addends or subtrahends. 5 = ___ + ___ = ___ + ___ = ___ - ___ Answer: 3 + 2 = 4 + 1 = 6 - 1 ITEM 1	Fill in the appropriate addends or subtrahends. 4 = ___ + ___ = ___ + ___ = ___ - ___ Answer: 2 + 2 = 3 + 1 = 8 - 4 ITEM 2
Fill in the appropriate addends or subtrahends. 6 = ___ + ___ = ___ + ___ = ___ - ___ Answer: 3 + 3 = 2 + 4 = 10 - 4 ITEM 3	Fill in the appropriate addends or subtrahends. 7 = ___ + ___ = ___ + ___ = ___ - ___ Answer: 4 + 3 = 6 + 1 = 10 - 3 ITEM 4

IOX Acceptability Rating: 1 Math

Objective 27 Grade 1 - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Whole Numbers

OBJECTIVE: Given a whole number orally, the student will write a numeral for that number.

SAMPLE ITEMS:

Write the correct numeral for the following whole number. Oral Cue: Five Possible Answer: 5, five, ... ITEM 1	Write the correct numeral for the following whole number. Oral Cue: Six Possible Answer: 6, six, ... ITEM 2
Write the correct numeral for the following whole number. Oral Cue: Four Possible Answer: 4, four, ... ITEM 3	Write the correct numeral for the following whole number. Oral Cue: Seven Possible Answer: 7, seven, ... ITEM 4

IOX Acceptability Rating: 1 Math

Objective 28 Grade 1 - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Even Numbers

OBJECTIVE: Given several sets of elements, the student will identify those sets which have an even number of elements by circling the sets and writing their cardinal numbers.

SAMPLE ITEMS:

Circle the set having an even number of elements and write its cardinal number.

{○,○} {△,△,△,}

Answer: {○,○} 2

ITEM 1

Circle the set having an even number of elements and write its cardinal number.

{△,△,△,△,△} {△,○,△,○,}

Answer: {▲,○, ▲,○,} 4

ITEM 2

Circle the set having an even number of elements and write its cardinal number.

{▲,▲,○,○,□,□,} {□,□,▲, □, □}

Answer: {▲,▲,○,○,□,□} 6

ITEM 3

Circle the set having an even number of elements and write its cardinal number.

{○,○,○,○ ○,○,○,○} {▲,▲ ▲}

Answer: {○,○,○,○ ○,○,○,○} 8

ITEM 4

IOX Acceptability Rating: 1 | Math
Ojective 29 | Grade 1 - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration System

SUB-CATEGORY: Odd Numbers

OBJECTIVE: Given several sets of elements, the student will identify those sets which have an odd number of elements by circling the set and writing its cardinal number.

SAMPLE ITEMS:

Circle the set having an odd number of elements and write its cardinal number. {○,○}, {○,○,○} Answer: {○,○,○} 3 ITEM 1	Circle the set having an odd number of elements and write its cardinal number. {□,□,□,□,□} {□,□,□,□} Answer: {□,□,□,□,□} 5 ITEM 2
Circle the set having an odd number of elements and write its cardinal number. {□} {○,○} Answer: {□} 1 ITEM 3	Circle the set having an odd number of elements and write its cardinal number. {0,0,0,0,0,0,0} {△,△,△,△,△,△} Answer: {0,0,0,0,0,0,0} 7 ITEM 4

IOX Acceptability Rating: 1 Math

Objective 30 Grade 1 - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Odd and Even Numbers

OBJECTIVE: Given a set of numbers, the student will identify the odd and even numbers by listing the numbers in the correct columns of odd or even.

SAMPLE ITEMS:

List the numbers under the odd or even columns.

2, 3, 7, 8

Answer:

Odd Numbers	Even Numbers
3	2
7	8

ITEM 1

List the numbers under the odd or even columns.

10, 12, 11, 5

Answer:

Odd Numbers	Even Numbers
11	10
5	12

ITEM 2

List the numbers under the odd or even columns.

4, 13, 9, 2

Answer:

Odd Numbers	Even Numbers
13	2
9	4

ITEM 3

List the numbers under the odd or even columns.

6, 8, 17, 7

Answer:

Odd Numbers	Even Numbers
17	6
7	8

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 31 Grade 1-3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Numerals

OBJECTIVE: Given any Roman numeral, the student will write the equivalent Hindu-Arabic numeral.

SAMPLE ITEMS:

Write the equivalent Hindu-Arabic numeral for the Roman numeral.

X =

Answer: 10

ITEM 1

Write the equivalent Hindu-Arabic numeral for the Roman numeral.

V =

Answer: 5

ITEM 2

Write the equivalent Hindu-Arabic numeral for the Roman numeral.

IV =

Answer: 4

ITEM 3

Write the equivalent Hindu-Arabic numeral for the Roman numeral.

VI =

Answer: 6

ITEM 4

IOX Acceptability Rating: 1
Objective 32

Math
Grade 1 - 3

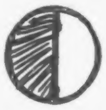
MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Rational Numbers
$\frac{1}{2}, \frac{1}{3}, \frac{1}{4} \ldots \frac{1}{10}$

OBJECTIVE: Given a model of a fraction, the student will write the numerical fraction for the rational number associated with the model.

SAMPLE ITEMS:

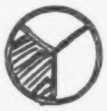
Write the number indicated by the shaded area.



Answer: $\frac{1}{2}$

ITEM 1

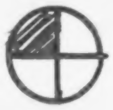
Write the number indicated by the shaded area.



Answer: $\frac{1}{3}$

ITEM 2

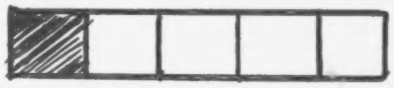
Write the number indicated by the shaded area.



Answer: $\frac{1}{4}$

ITEM 3

Write the number indicated by the shaded area.



Answer: $\frac{1}{5}$

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 33 Grade 1 - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Rational Numbers -- $\frac{1}{2}, \frac{1}{3}, \frac{1}{4} \text{ --- } \frac{1}{10}$

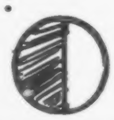
OBJECTIVE: Given appropriate materials, the student will identify and construct models for one-half, one-third, and one-fourth... one tenth.

SAMPLE ITEMS:

Construct a model for the following number.

$\frac{1}{2}$ =

Possible Answer:

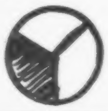


ITEM 1

Construct a model for the following number.

$\frac{1}{3}$ =

Possible Answer:

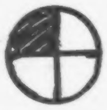


ITEM 2

Construct a model for the following number.

$\frac{1}{4}$ =

Possible Answer:

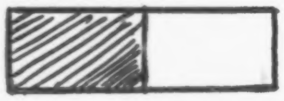


ITEM 3

Construct a model for the following number:

$\frac{1}{2}$ =

Possible Answer:



ITEM 4

IOX Acceptability Rating: 1 Math

Objective 34 Grade 1 - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Place Value -- two-digit

OBJECTIVE: Given a two-digit numeral, the student will distinguish between its digits by writing each digit under the correct ones and tens columns.

SAMPLE ITEMS:

Write each digit in the proper column.

Given: 73

Answer:

Tens	Ones
7	3

ITEM 1

Write each digit in the proper column.

Given: 10

Answer:

Tens	Ones
1	0

ITEM 2

Write each digit in the proper column.

Given: 23

Answer:

Tens	Ones
2	3

ITEM 3

Write each digit in the proper column.

Given: 39

Answer:

Tens	Ones
3	9

ITEM 4

IOX Acceptability Rating: 1

Math

Objective 35

Grade 1 - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Expanded Notation

OBJECTIVE: Given a two-digit numeral, the student will write it out in expanded form.

SAMPLE ITEMS:

Write the following number in expanded form.

54 =

Answer: 50 + 4

ITEM 1

Write the following number in expanded form.

63 =

Answer: 60 + 3

ITEM 2

Write the following number in expanded form.

34 =

Answer: 30 + 4

ITEM 3

Write the following number in expanded form.

20

Answer: 20 + 0

ITEM 4

IOX Acceptability Rating: 1

Math

Objective 36

Grade 1 - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Rounded Numbers

OBJECTIVE: Given a (two-digit) number, the student will round the number to the nearest tens by writing the cardinal number nearest the tens.

SAMPLE ITEMS:

Round off the number to the nearest tens. 32, Answer: 30 ITEM 1	Round off the number to the nearest tens. 44, Answer: 40 ITEM 2
Round off the number to the nearest tens. 55, Answer: 60 ITEM 3	Round off the number to the nearest tens. 67, Answer: 70 ITEM 4

IOX Acceptability Rating: 1

Math

Objective 37

Grade 1 - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Counting by 2's. 5's, 10's,...

OBJECTIVE: Given a non-empty set, the student will count the elements by two's, five's, ten's, etc., to determine the number of elements in the set.

SAMPLE ITEMS:

Count the elements in this set by 2's. $n\{\triangle, \triangle, \triangle, \triangle, \triangle, \triangle\} = ?$ Answer: 2 + 2 + 2 + = 6 ITEM 1	Count the elements in this set by 5's. $n\{0,0,0,0,0,0,0,0,0,0\} = ?$ Answer: 5 + 5 = 10 ITEM 2
Count the elements in this set by 10's. $n\left\{\begin{array}{c} \circ,\circ,\circ,\circ,\circ \\ \circ,\circ,\circ,\circ,\circ \\ \circ,\circ,\circ,\circ,\circ \\ \circ,\circ,\circ,\circ,\circ \\ \circ,\circ,\circ,\circ,\circ \\ \circ,\circ,\circ,\circ,\circ \end{array}\right\} = ?$ Answer: 10 + 10 + 10 = 30 ITEM 3	Count the elements in this set by 2's. $n\{\square,\square,\square,\square,\square,\square,\square,\square\} = ?$ Answer: 2 + 2 + 2 + 2 = 8 ITEM 4

IOX Acceptability Rating: 1
Objective 38

Math
Grade 2-3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Ordinal Numbers

OBJECTIVE: Given a sequence of events, the student will identify the position of a particular event by writing the correct ordinal number word for that event.

SAMPLE ITEMS:

Write the ordinal number words for these months of the year.

January a. ________
September b. ________
June c. ________

Answer:

a. first
b. ninth
c. sixth

ITEM 1

Write the ordinal number words for these days of the week.

Monday a. ________
Sunday b. ________
Saturday c. ________

Answer:

a. first
b. seventh
c. sixth

ITEM 2

Write the ordinal number words for these meals.

Dinner a. ________
Lunch b. ________
Breakfast c. ________

Answer:

a. third
b. second
c. first

ITEM 3

Write the ordinal number words for these grades in school.

Grade 1 a. ________
Grade 3 b. ________
Grade 6 c. ________

Answer:

a. first
b. third
c. sixth

ITEM 4

IOX Acceptability Rating: 1

Math

Objective 39

Grade 2 - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Names for Numbers

OBJECTIVE: Given a number between 1 and 200, the student will supply different names for the number by writing it first as 3 addends and then as 2 addends.

SAMPLE ITEMS:

Write two number names for the following number.

123 = __ + __ + __ = __

Possible Answer:

100 + 20 + 3 = 100 + 23

ITEM 1

Write two number names for the following number.

34 = __ + __ + __ = __ + __

Possible Answer:

15 + 15 + 4 = 30 + 4

ITEM 2

Write two number names for the following number.

85 = __ + __ + __ = __ + __

Possible Answer:

15 + 10 + 60 = 40 + 45

ITEM 3

Write two number names for the following number.

150 = __ + __ + __ = __ + __

Possible Answer:

100 + 25 + 25 = 75 + 75

ITEM 4

IOX Acceptability Rating: 1
Objective 40

Math
Grade 2 - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Expanded Notation

OBJECTIVE: Given a 3-digit number, the student will write it out in expanded form.

SAMPLE ITEM:

Write the following numeral in expanded form. 317 = ___ + ___ + ___ Answer: 300 + 10 + 7 ITEM 1	Write the following numeral in expanded form. 211 = ___ + ___ + ___ Answer: 200 + 10 + 1 ITEM 2
Write the following numeral in expanded form. 152 + ___ + ___ + ___ Answer: 100 + 50 + 2 ITEM 3	Write the following numeral in expanded form. 478 = ___ + ___ + ___ Answer: 400 + 70 + 8 ITEM 4

IOX Acceptability Rating: 1

Math

Objective 41

Grade 2- 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Rounded Numbers

OBJECTIVE: Given a (three-digit) number, the student will round the number to the nearest hundreds by writing the cardinal number.

SAMPLE ITEMS:

Round off the number to the nearest hundreds. 412 Answer: 400 ITEM 1	Round off the number to the nearest hundreds. 698 Answer: 700 ITEM 2
Round off the number to the nearest hundreds. 723 Answer: 700 ITEM 3	Round off the number to the nearest hundreds. 837 Answer: 800 ITEM 4

IOX Acceptability Rating: 1

Objective 42

Math

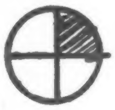
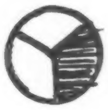
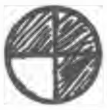
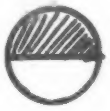
Grade 2 - 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Rational Numbers: $\frac{1}{2}$, $\frac{2}{2}$, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{3}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$, $\frac{4}{4}$, ..., $\frac{10}{10}$

> OBJECTIVE: Given a model of halves, thirds, fourths, ...tenths, the student will write a fraction for the rational number associated with the model.

SAMPLE ITEMS:

Write the fraction for the shaded part of the figure.  Answer: $\frac{1}{4}$ ITEM 1	Write the fraction for the shaded part of the figure.  Answer: $\frac{1}{3}$ ITEM 2
Write the fraction for the shaded part of the figure.  Answer: $\frac{3}{4}$ ITEM 3	Write the fraction for the shaded part of the figure.  Answer: $\frac{1}{2}$ ITEM 4

IOX Acceptability Rating: 1

Objective 43

Math

Grade 3

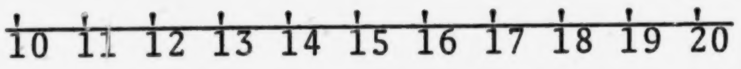
MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Multiples

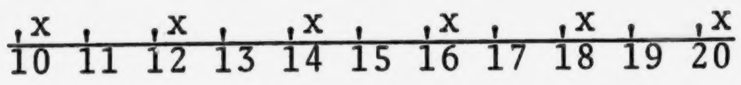
OBJECTIVE: Given a number and a number line, the student will label the multiples of that number.

SAMPLE ITEMS:

Mark with an x the places on the number line which represent multiples of 2.

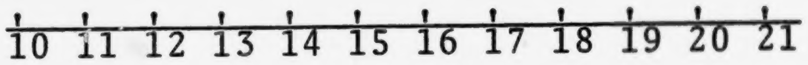

10 11 12 13 14 15 16 17 18 19 20

Answer:

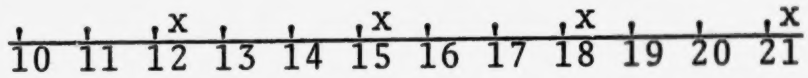

x x x x x x
10 11 12 13 14 15 16 17 18 19 20

ITEM 1

Mark with an x the places on the number line which represent multiples of 3.

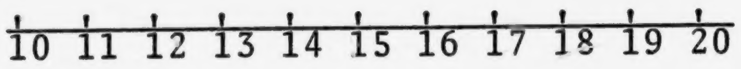

10 11 12 13 14 15 16 17 18 19 20 21

Answer:

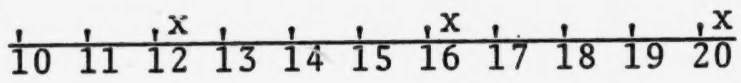

x x x x
10 11 12 13 14 15 16 17 18 19 20 21

ITEM 2

Mark with an x the places on the number line which represent multiples of 4.

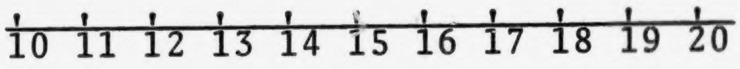

10 11 12 13 14 15 16 17 18 19 20

Answer:

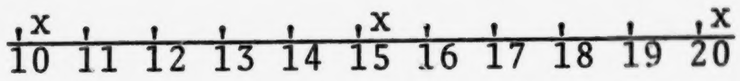

x x x
10 11 12 13 14 15 16 17 18 19 20

ITEM 3

Mark with an x the places on the number line which represent multiples of 5.


10 11 12 13 14 15 16 17 18 19 20

Answer:


x x x
10 11 12 13 14 15 16 17 18 19 20

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 44 Grade 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Multiples

OBJECTIVE: Given an incomplete sequence of multiples, the student will supply the missing multiples.

SAMPLE ITEMS:

Write the numbers that complete the following sequence.

0, 2, 4, 6, _, _, _,
14, 16

Answer: 8, 10, 12

ITEM 1

Write the numbers that complete the following sequence.

0, 3, 6, _, _, _,
18, 21

Answer: 9, 12, 15

ITEM 2

Write the numbers that complete the following sequence.

0, 4, 8, 12, _, _, _,
28, 32

Answer: 16, 20, 24

ITEM 3

Write the numbers that complete the following sequence.

0, 5, 10, 15, _, _, _,
35, 40

Answer: 20, 25, 30

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 45 Grade 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Common Multiples

OBJECTIVE: Given two numbers, the student will list the common multiples.

SAMPLE ITEMS:

State the common multiples of 2 and 3 that are less than 15. Answer: 6, 12 ITEM 1	State the common multiples of 3 and 4 that are less than 30. Answer: 12, 24 ITEM 2
State the common multiples of 3 and 6 that are less than 20. Answer: 12, 18 ITEM 3	State the common multiples of 2 and 5 that are less than 40. Answer: 10, 20, 30 ITEM 4

IOX Acceptability Rating: 1
Objective 46

Math
Grade 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Factors and Common Factors

OBJECTIVE: Given a set of numbers, the student will list the factors of each number and state the common factors.

SAMPLE ITEMS:

List the factors and common factors of 30 and 14.

Factors	Common Factors
30:	
14:	

Answer:

Factors	Common Factors
30: 2, 5, 3	2
14: 2, 7	

ITEM 1

List the factors and common factors of 6 and 16.

Factors	Common Factors
6:	
15:	

Answer:

Factors	Common Factors
6: 2, 3	3
15: 3, 5	

ITEM 2

List the factors and common factors of 35 and 14.

Factors	Common Factors
35:	
14:	

Answer:

Factors	Common Factors
35: 7, 5	7
14: 7, 2	

ITEM 3

List the factors and common factors of 18 and 36.

Factors	Common Factors
18:	
36:	

Answer:

Factors	Common Factors
18: 2, 3, 6, 9	2, 3, 6, 9
36: 2, 18, 3, 12, 4, 9, 6	

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 47 Grade 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Prime Numbers

OBJECTIVE: Given two numbers, the student will list all the prime numbers between them.

SAMPLE ITEMS:

List all the prime numbers between 1 and 5. Answer: 1, 2, 3, 5 ITEM 1	List all the prime numbers between 6 and 10. Answer: 7 ITEM 2
List all the prime numbers between 10 and 20. Answer: 11, 13, 17, 19 ITEM 3	List all the prime numbers between 30 and 40. Answer: 31, 37 ITEM 4

IOX Acceptability Rating: 1

Objective 48

Math

Grade 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Place Value, 4-digit Numerals

OBJECTIVE: Given a 4-digit numeral, the student will write the place value for any given digit.

SAMPLE ITEMS:

Write the place value for the digit 6 in 3654. ___________

Answer: hundreds

ITEM 1

Write the place value for the digit 3 in 3654. ___________

Answer: thousands

ITEM 2

Write the place value for the digit 4 in 3654. ___________

Answer: ones

ITEM 3

Write the place value for the digit 5 in 3654. ___________

Answer: tens

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 49 Grade 3

MAJOR CATEGORY: Numbers, Numerals, Numeration Systems

SUB-CATEGORY: Place Value, 4-digit numbers

OBJECTIVE: Given a 4-digit number, the student will distinguish between its digits by writing each digit in the correct place column.

SAMPLE ITEMS:

Write each digit of the number in the correct place value column.

Number	1,000's	100's	10's	1's
4932				

Answer:

1,000's	100's	10's	1's
4	9	3	2

ITEM 1

Write each digit of the number in the correct place value column.

Number	1,000's	100's	10's	1's
3925				

Answer:

1,000's	100's	10's	1's
3	9	2	5

ITEM 2

Write each digit of the number in the correct place value column.

Number	1,000's	100's	10's	1's
2463				

Answer:

1,000's	100's	10's	1's
2	4	6	3

ITEM 3

Write each digit of the number in the correct place value column.

Number	1,000's	100's	10's	1's
1369				

Answer:

1,000's	100's	10's	1's
1	3	6	9

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 50 Grade K

MAJOR CATEGORY: Operations and Their Properties

SUB–CATEGORY: Addition Through Sums of 10

OBJECTIVE: Given two disjoint sets of elements, the student will unite the sets numerically by finding the cardinal number of the new set thus formed.

SAMPLE ITEMS:

How many elements are in both sets?
a. {○,○,○,○}
b. {△,△,△}

ANSWER: 7

ITEM 1

How many elements are in both sets?
a. {△,△,△}
b. {○,○}

ANSWER: 5

ITEM 2

How many elements are in both sets?
a. {○,○,○}
b. {△,△,△}

ANSWER: 6

ITEM 3

How many elements are in both sets?
a. {○,○,○,○,○,○}
b. {△,△,△}

ANSWER: 9

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 51 Grade K

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Subtraction

OBJECTIVE: Given a set of 5 to 10 elements, the student will identify and remove a subset of up to 5 elements and name the cardinal number of the remaining subset.

SAMPLE ITEMS:

From the following set of 6 elements, remove a subset of 4 elements, and tell how many are left. {□,□,□,□,□,□} Answer: 2 ITEM 1	From the following set of 5 elements, remove a subset of 2 elements, and tell how many are left. {△,△,△,△,△} Answer: 3 ITEM 2
From the following set of 8 elements, remove a subset of 6 elements, and tell how many are left. {○,○,○,○,○,○,○,○} Answer: 2 ITEM 3	From the following set of 7 elements, remove a subset of 3 elements, and tell how many are left. {▼,▼,▼,▼,▼,▼,▼} Answer: 4 ITEM 4

IOX Acceptability Rating: 1 Math

Objective 52 Grade K-2

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Subtraction

OBJECTIVE: Given a subtraction problem, the student will construct pictorially an equivalent set of objects, remove a subset, and write numerically the cardinal number of the remaining set.

SAMPLE ITEMS:

For the following subtraction problem, draw an equivalent set of objects, subtract a subset by crossing out the necessary elements, and write the number of the remaining set. 6-2= ANSWER: $\{\cancel{\circ},\cancel{\circ},\circ,\circ,\circ,\circ\}, 4$ ITEM 1	For the following subtraction problem, draw an equivalent set of objects, subtract a subset by crossing out the necessary elements, and write the number of the remaining set. 7-5= ANSWER: $\{\cancel{\circ},\cancel{\circ},\cancel{\circ},\cancel{\circ},\cancel{\circ},\circ,\circ\}, 2$ ITEM 2
For the following subtraction problem, draw an equivalent set of objects, subtract a subset by crossing out the necessary elements, and write the number of the remaining set. 8-4= ANSWER: $\cancel{\triangle},\cancel{\triangle},\cancel{\triangle},\cancel{\triangle},\triangle,\triangle,\triangle,\triangle\}, 4$ ITEM 3	For the following subtraction problem, draw an equivalent set of objects, subtract a subset by crossing out the necessary elements, and write the number of the remaining set. 5-4= ANSWER: $\{\cancel{\triangle},\cancel{\triangle},\cancel{\triangle},\cancel{\triangle},\triangle\}, 1$ ITEM 4

IOX Acceptability Rating: 1 Math

Objective 53 Grade K

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Addition and Subtraction - through sums of 10

OBJECTIVES: Given a set of up to 5 objects and a larger set of up to 10 objects, the student will indicate how many more objects are needed to construct the second set.

SAMPLE ITEMS:

Given: {△,△} Tell how many more elements are needed to equal {△,△,△,△,△} Answer: 3 ITEM 1	Given: {○,○} Tell how many more elements are needed to equal {○,○,○,○,○,○,○,○,○,○} Answer: 8 ITEM 2
Given: {◇,◇} Tell how many more elements are needed to equal {◇,◇,◇,◇} Answer: 2 ITEM 3	Given: {□,□} Tell how many more elements are needed to equal {□,□,□,□,□,□} Answer: 4 ITEM 4

IOX Acceptability Rating: 1 | Math

Objective 54 | Grade 1-2

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Inverse Relationship

OBJECTIVE: Given the sum of an addition problem and its addends, the student will construct a numerical subtraction problem with the sum as the minuend.

SAMPLE ITEM:

Given the following addition problem and its sum, rewrite it as a subtraction problem. Given: 3+3=6, 6-__=__ ANSWER: 6-3=3 ITEM 1	Given the following addition problem and its sum, rewrite it as a subtraction problem. 2+5=7, 7-__=__ ANSWER: 7-5=2 ITEM 2
Given the following addition problem and its sum, rewrite it as a subtraction problem. Given: 4+1=5, 5-__=__ ANSWER: 5-1=4 ITEM 3	Given the following addition problem and its sum, rewrite it as a subtraction problem. 3+5=8, 8-__=__ ANSWER: 8-5=3 ITEM 4

IOX Acceptability Rating: 1
Math

Objective 55
Grade 1-2

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Inverse Operations of Addition

OBJECTIVE: Given an addition problem with a missing addend, the student will solve it by constructing pictorially a subtraction problem with the sum as the minuend and the given addend as the subtrahend.

SAMPLE ITEMS:

Cross out the elements in the set to indicate the missing addend. 6 +___= 10 Answer: $\{\cancel{\square},\cancel{\square},\cancel{\square},\cancel{\square},\cancel{\square},\cancel{\square},\square,\square,\square,\square\}$, 4 ITEM 1	Cross out the elements in the set to indicate the missing addend. 3 + ___ = 5 Answer: $\{\cancel{\triangle},\cancel{\triangle},\cancel{\triangle},\triangle,\triangle\}$, 2 ITEM 2
Cross out the elements in the set to indicate the missing addend. 4 + ___ = 8 Answer: $\{\cancel{\square},\cancel{\square},\cancel{\square},\cancel{\square},\square,\square,\square,\square\}$, 4 ITEM 3	Cross out the elements in the set to indicate the missing addend. 2 + ___ = 6 Answer: $\{\cancel{\bigcirc},\cancel{\bigcirc},\bigcirc,\bigcirc,\bigcirc,\bigcirc\}$, 4 ITEM 4

IOX Acceptability Rating: 1

Objective 56

Math

Grade 1-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Addition Using Sets

OBJECTIVE: Given an addition problem, the student will construct pictorially the union of its two disjoint sets and write the numerical representation of the union.

SAMPLE ITEMS:

ITEM 1

For the following problem, draw an equivalent set of objects and write the number for the answer.

2+3=______

ANSWER: $\{\circ,\circ\} \cup \{\square,\square,\square\} = \left\{\begin{matrix}\circ,\circ\\ \square,\square,\square\end{matrix}\right\}, 5$

ITEM 2

For the following problem, draw an equivalent set of objects and write the number for the answer.

3+6=______

ANSWER: $\{\triangle,\triangle,\triangle\} \cup \{x,x,x,x,x,x\} = \left\{\begin{matrix}\triangle,\triangle,\triangle,x,x,x\\ x,x,x\end{matrix}\right\}, 9$

ITEM 3

For the following problem, draw an equivalent set of objects and write the number for the answer.

4+3=______

ANSWER: $\{\triangle,\triangle,\triangle,\triangle\} \cup \{x,x,x\} = \left\{\begin{matrix}\triangle,\triangle,\triangle,\triangle,\\ x,x,x\end{matrix}\right\}, 7$

ITEM 4

For the following problem, draw an equivalent set of objects and write the number for the answer.

2+2=______

ANSWER: $\{\circ,\circ\} \cup \{\triangle,\triangle\} = \left\{\begin{matrix}\circ,\circ,\\ \triangle,\triangle\end{matrix}\right\}, 4$

Math

Grade 1-3

IOX Acceptability Rating: 1

Objective 57

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Subtraction Using Sets

OBJECTIVE: Given two disjoint non-equivalent sets, the student will compare the sets and write the numeral which expresses the difference of their cardinal numbers.

SAMPLE ITEMS:

Write the number that expresses the difference between the cardinal numbers of the two sets. A= {○,○,○,○,○,○} B= {x,x} ANSWER: 4 ITEM 1	Write the number that expresses the difference between the cardinal numbers of the two sets. A= {○,○,○,○} B= {△,△,△} ANSWER: 1 ITEM 2
Write the number that expresses the difference between the cardinal numbers of the two sets. A= {X,X,X,X,X} B= {○,○} ANSWER: 3 ITEM 3	Write the number that expresses the difference between the cardinal numbers of the two sets. A= {△,△,△,△,△,△} B= {▽,▽,▽,▽} ANSWER: 2 ITEM 4

IOX Acceptability Rating: 1

Objective 58

Math

Grade 1-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Addition Through Sums of 18

OBJECTIVE: Given an addition problem of 2 addends through sums of 18, the student will write the sum.

SAMPLE ITEMS:

Find the sum. 9+6=___ ANSWER: 15 ITEM 1	Find the sum. 5+3=___ ANSWER: 8 ITEM 2
Find the sum. 4+10=___ ANSWER: 14 ITEM 3	Find the sum. 9+9=___ ANSWER: 18 ITEM 4

IOX Acceptability Rating: 1

Objective 59

Math

Grade 1-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Addition Through Sums of 18

OBJECTIVE: Given an addition problem through sums of 18, and given the sum, the student will write the missing addend.

SAMPLE ITEMS:

Find the missing addend. 3+___=9 ANSWER: 6 ITEM 1	Find the missing addend 5+___=11 ANSWER: 6 ITEM 2
Find the missing addend. 9+___=18 ANSWER: 9 ITEM 3	Find the missing addend. 6+___=14 ANSWER: 8 ITEM 4

IOX Acceptability Rating: 1

Math

Objective 60

Grade 1-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Subtraction Through Sums of 18

OBJECTIVE: Given a minuend, not to exceed 18, and a difference, the student will supply the missing subtrahend.

SAMPLE ITEMS:

Find the missing subtrahend. 14-____=6 ANSWER: 8 ITEM 1	Find the missing subtrahend. 15-____=11 ANSWER: 4 ITEM 2
Find the missing subtrahend. 11-____=5 ANSWER: 6 ITEM 3	Find the missing subtrahend. 9-____=4 ANSWER: 5 ITEM 4

IOX Acceptability Rating: 1

Math

Objective 61

Grade 1-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Whole Numbers--Column Addition Without Regrouping

OBJECTIVE: Given 2-digit numerals in column addition, the student will find the sum without regrouping.

SAMPLE ITEMS:

Find the sum. 21 36 +40 ANSWER: 97 ITEM 1	Find the sum. 12 61 +14 ANSWER: 87 ITEM 2
Find the sum. 10 14 21 ANSWER: 45 ITEM 3	Find the sum. 47 41 +11 ANSWER: 99 ITEM 4

IOX Acceptability Rating: 1 | Math
Objective 62 | Grade 1-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Identity Element for Addition

OBJECTIVE: Given an equation in which zero is the missing addend, the student will supply the missing addend.

SAMPLE ITEM:

Supply the missing addend. ____+10=10 ANSWER: 0 ITEM 1	Supply the missing addend. 9+____=9 ANSWER: 0 ITEM 2
Supply the missing addend. ____+13=13 ANSWER: 0 ITEM 3	Supply the missing addend. 27+____=27 ANSWER: 0 ITEM 4

IOX Acceptability Rating: 1

Math

Objective 63

Grade 1-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Zero as the Identity Element

OBJECTIVE: Given an equation in which the subtrahend is the identity element, the student will find the difference.

SAMPLE ITEMS:

Write the difference. 6-0=______ ANSWER: 6 ITEM 1	Write the difference. 7-0=____ ANSWER: 7 ITEM 2
Write the difference. 8-0=______ ANSWER: 8 ITEM 3	Write the difference. 3-0=____ ANSWER: 3 ITEM 4

IOX Acceptability Rating: 1 Math

Objective 64 Grade 1-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Subtraction - Zero as the Identity Element

OBJECTIVE: Given an equation in which zero is the missing subtrahend, the student will supply the missing subtrahend.

SAMPLE ITEMS:

Supply the missing subtrahend. $8 - \underline{\qquad} = \underline{8}$ ANSWER: 0 ITEM 1	Supply the missing subtrahend. $7 - \underline{\qquad} = \underline{7}$ ANSWER: 0 ITEM 2
Supply the missing subtrahend. $4 - \underline{\qquad} = 4$ ANSWER: 0 ITEM 3	Supply the missing subtrahend. $5 - \underline{\qquad} = 5$ ANSWER: 0 ITEM 4

IOX Acceptability Rating: 1 Math

Objective 65 Grade 1-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Inverse Element

OBJECTIVE: Given a subtraction equation with a missing subtrahend, and a difference of zero, the student will complete the equation.

SAMPLE ITEMS:

Complete the following equation. 17-___=0 ANSWER: 17 ITEM 1	Complete the following equation. 10-____=0 ANSWER: 10 ITEM 2
Complete the following equation. 13-____=0 ANSWER: 13 ITEM 3	Complete the following equation. 7-____ =0 ANSWER: 7 ITEM 4

IOX Acceptability Rating: 1 Math

Objective 66 Grade 1-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Commutative Property of Addition

OBJECTIVE: Given an addition equation with 2 addends, the student will reverse the order of the addends and find the sum.

SAMPLE ITEMS:

For the following addition problem, reverse the order of the addends and write the sum. 2+3=__+__=__ ANSWER: 3+2=5 ITEM 1	For the following addition problem, reverse the order of the addends and write the sum. 5+4=__+__=__ ANSWER: 4+5=9 ITEM 2
For the following addition problem, reverse the order of the addends and write the sum. 6+2=__+__=__ ANSWER: 2+6=8 ITEM 3	For the following addition problem, reverse the order of the addends and write the sum. 7+5=__+__=__ ANSWER: 5+7=12 ITEM 4

IOX Acceptability Rating: 1

Math

Objective 67

Grade 1-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Associative Property of Addition

OBJECTIVE: Given an addition problem of up to 3 addends with a sum through 18, the student will solve the equation by combining 2 of the addends in parentheses and adding their sum to the remaining addend.

SAMPLE ITEMS:

Write the missing addend. Then solve the equation.
(2+3)+2= _____+2=______

ANSWER: 5+2=7

ITEM 1

Write the missing addend. Then solve the equation.
(1+4)+3= _____ +3+______

ANSWER: 5+3=8

ITEM 2

Write the missing addend. Then solve the equation.
(4+2)+3+_____+3=______

ANSWER: 6+3=9

ITEM 3

Write the missing addend. Then solve the equation.
(3+6)+1=_____+1_____

ANSWER: 9+1=10

ITEM 4

IOX Acceptability Rating: 1

Objective 68

Math

Grade 2-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Addition of 3 and 4 Digit Numerals Without Regrouping

OBJECTIVE: Given an addition problem of three and four digit numerals, the student will write the sum.

SAMPLE ITEMS:

Solve the following problem:

$$\begin{array}{r} 2405 \\ 271 \\ 301 \\ +4012 \\ \hline \end{array}$$

ANSWER: 6989

ITEM 1

Solve the following problem:

$$\begin{array}{r} 345 \\ 111 \\ +222 \\ \hline \end{array}$$

ANSWER: 678

ITEM 2

Solve the following problem:

$$\begin{array}{r} 1243 \\ 2142 \\ 5001 \\ +1111 \\ \hline \end{array}$$

ANSWER: 9497

ITEM 3

Solve the following problem:

$$\begin{array}{r} 1333 \\ 636 \\ +3000 \\ \hline \end{array}$$

ANSWER: 4969

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 69 Grade 2-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Subtraction Without Regrouping

OBJECTIVE: Given 3-digit numerals in subtraction without regrouping, the student will write the difference.

SAMPLE ITEMS:

Find the difference. 825 -612 ANSWER: 213 ITEM 1	Find the difference. 247 -123 ANSWER: 124 ITEM 2
Find the difference. 256 -133 ANSWER: 123 ITEM 3	Find the difference. 657 -214 ANSWER: 443 ITEM 4

IOX Acceptability Rating: 1

Objective 70

Math

Grade 2-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Addition of Measures (Linear, Liquid, Weight,...) Without Regrouping

OBJECTIVE: Given an addition problem in measures (linear, weight, etc.), the student will write the sum.

SAMPLE ITEMS:

Write the sum. 1 ft. 6 in. + 1 ft. 5 in. ANSWER: 2 ft. 11 in. ITEM 1	Write the sum. 3 lb. 3 oz. + 4 lb. 4 oz. ANSWER: 7 lb. 7 oz. ITEM 2
Write the sum. 1 qt. + 1 qt. 1 pt. ANSWER: 2 qt. 1 pt. ITEM 3	Write the sum. 1 ft. 3 in. + 1 ft. 6 in. ANSWER: 2 ft. 9 in. ITEM 4

IOX Acceptability Rating: 1 Math

Objective 71 Grade 2-3

MAJOR CATEGORY: Operation and Their Properties

SUB-CATEGORY: Subtraction of Measures (Linear, Weight, Liquid...) Without Regrouping.

OBJECTIVE: Given a subtraction problem in measures (linear, liquid, weight, etc.), the student will write the difference.

SAMPLE ITEMS:

Write the difference. 2 ft. 11 in. -1 ft. 6 in. ANSWER: 1 ft. 5 in. ITEM 1	Write the difference. 3 lb. 6 oz. -2 lb. 3 oz. ANSWER: 1 lb. 3 oz. ITEM 2
Write the difference. 2 qt. 10 oz. -1 qt. 5 oz. ANSWER: 1 qt. 5 oz. ITEM 3	Write the difference. 6 ft. 10 in. -3 ft. 6 in. ANSWER: 3 ft. 4 in. ITEM 4

IOX Acceptability Rating: 1 Math

Objective 72 Grade 2-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Column Addition with Re-grouping

OBJECTIVE: Given a 2-digit addition problem of 2 addends, with re-grouping, the student will write the sum.

SAMPLE ITEMS:

Find the sum. $\begin{array}{r} 49 \\ +52 \\ \hline \end{array}$ ANSWER: 101 ITEM 1	Find the sum. $\begin{array}{r} 58 \\ +23 \\ \hline \end{array}$ ANSWER: 81 ITEM 2
Find the sum. $\begin{array}{r} 29 \\ +11 \\ \hline \end{array}$ ANSWER: 40 ITEM 3	Find the sum. $\begin{array}{r} 36 \\ +44 \\ \hline \end{array}$ ANSWER: 80 ITEM 4

IOX Acceptability Rating: 1 Math

Objective 73 Grade 2-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Column Addition (3-4 Digit Numerals) With Regrouping

OBJECTIVE: Given an addition problem with two addends of 3-4 digits, the student will write the sum.

SAMPLE ITEMS:

Solve the following problem:

$$\begin{array}{r}453\\+439\\\hline\end{array}$$

ANSWER: 892

ITEM 1

Solve the following problem:

$$\begin{array}{r}533\\+289\\\hline\end{array}$$

ANSWER: 822

ITEM 2

Solve the following problem:

$$\begin{array}{r}444\\+456\\\hline\end{array}$$

ANSWER: 900

ITEM 3

Solve the following problem:

$$\begin{array}{r}333\\+177\\\hline\end{array}$$

ANSWER: 510

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 74 Grade 2-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Column Subtraction With Regrouping

OBJECTIVE: Given 2-digit numerals in subtraction with regrouping, the student will write their difference.

SAMPLE ITEMS:

Find the difference. 92 -53 ANSWER: 39 ITEM 1	Find the difference. 81 -65 ANSWER: 16 ITEM 2
Find the difference. 63 -54 ANSWER: 9 ITEM 3	Find the difference. 75 -66 ANSWER: 9 ITEM 4

IOX Acceptability Rating: 1 Math

Objective 75 Grade 2-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Column Subtraction (3-4 Digit Numerals) with Regrouping

OBJECTIVE: Given a subtraction problem with subtrahends of 3-4 digits, the student will write the difference.

SAMPLE ITEMS:

Solve the following problem.

$$\begin{array}{r} 570 \\ -147 \\ \hline \end{array}$$

ANSWER: 423

ITEM 1

Solve the following problem.

$$\begin{array}{r} 702 \\ -613 \\ \hline \end{array}$$

ANSWER: 89

ITEM 2

Solve the following problem.

$$\begin{array}{r} 632 \\ -571 \\ \hline \end{array}$$

ANSWER: 61

ITEM 3

Solve the following problem.

$$\begin{array}{r} 5776 \\ -2008 \\ \hline \end{array}$$

ANSWER: 3768

ITEM 4

IOX Acceptability Rating: 1

Objective 76

Math

Grade 2-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Addition and Subtraction--Inverse Relationship

OBJECTIVE: Given a two digit subtraction equation, the student will check the remainder by adding it to the subtrahend.

SAMPLE ITEMS:

Given the subtraction equation:

75-23=52

Check the remainder by addition.

ANSWER: 52+23=75

ITEM 1

Given the subtraction equation:

63-21=42

Check the remainder by addition.

ANSWER: 42+21=63

ITEM 2

Given the subtraction equation:

57-24=33

Check the remainder by addition.

ANSWER: 33+24=57

ITEM 3

Given the subtraction equation:

48-35=13

Check the remainder by addition.

ANSWER: 13+35=48

ITEM 4

IOX Acceptability Rating: 1 | Math

Objective 77 | Grade 2-3

MAJOR CATEGORY: Operations

SUB-CATEGORY: Addition and Subtraction - Inverse Operations

OBJECTIVE: Given a two number addition equation with a missing addend, the student will write the related subtraction equation.

SAMPLE ITEMS:

Given the addition equation ___ + 61 = 157 Write the related subtraction equation. ANSWER: 157 - 61 = ___ ITEM 1	Given the addition equation 16 + ___ = 48 Write the related subtraction equation. ANSWER: 48 - 16 = ___ ITEM 2
Given the addition equation 27 + ___ = 59 Write the related subtraction equation. ANSWER: 59 - 27 = ___ ITEM 3	Given the addition equation ___ + 32 = 75 Write the related subtraction equation. ANSWER: 75 - 32 = ___ ITEM 4

IOX Acceptability Rating: 1

Math

Objective 78

Grade 2-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Multiplication--With 1-digit Factors

OBJECTIVE: Given a multiplication combination of 1-digit factors, the student will write its equivalent as addition of one of the factors.

SAMPLE ITEMS:

Write the addends to show what 4 X 3 means. 4 X 3=__+__+__+__ ANSWER: 3+3+3+3 or 4+4+4 ITEM 1	Write the addends to show what 2 X 3 means. 2 X 3=__+__ ANSWER: 3+3 or 2+2+2 ITEM 2
Write the addends to show what 4 X 5 means. 4 X 5=__+__+__+__ ANSWER: 5+5+5+5 or 4+4+4+4+4 ITEM 3	Write the addends to show what 6 X 2 means. 6 X 2=__+__+__+__+__+__ ANSWER: 2+2+2+2+2+2 or 6+6 ITEM 4

IOX Acceptability Rating: 1 Math

Objective 79 Grade 2-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Multiplication of 1, 2, and 3 Digit Numbers by a One-Digit Number

OBJECTIVE: Given a 1, 2, or 3-digit multiplicand the student will multiply it by a one-digit number and state the answer.

SAMPLE ITEMS:

Solve the following problem:

7 X 8 = ____

ANSWER: 56

ITEM 1

Solve the following problem:

15 X 4 = ____

ANSWER: 60

ITEM 2

Solve the following problem:

472 X 3 = ____

ANSWER: 1416

ITEM 3

Solve the following problem:

54 X 5 = ____

ANSWER: 270

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 80 Grade 2-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Multiplicative Identity (1)

OBJECTIVE: Given a multiplication problem, in which one factor is the identity element for multiplication, the student will rewrite the factors using the commutative property and write the product.

SAMPLE ITEMS:

Fill in the missing blanks. 6 X 1=1 X__=__ ANSWER: 1 X 6 = 6 ITEM 1	Fill in the missing blanks. 3 X 1=1 X__=__ ANSWER: 1 X 3 = 3 ITEM 2
Fill in the missing blanks. 5 X 1=1 X__=__ ANSWER: 1 X 5 = 5 ITEM 3	Fill in the missing blanks. 7 X 1=1 X__=__ ANSWER: 1 X 7 = 7 ITEM 4

IOX Acceptability Rating: 1 Math

Objective 81 Grade 2-3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Multiplicative Property of Zero

OBJECTIVE: Given a multiplication problem of which one factor is zero, the student will write the product.

SAMPLE ITEMS:

Find the product. 2 X 0 = ____ ANSWER: 0 ITEM 1	Find the product. 3 X 0 = ____ ANSWER: 0 ITEM 2
Find the product. 24 X 0 = ANSWER: 0 ITEM 3	Find the product. 115 X 0 = ANSWER: 0 ITEM 4

IOX Acceptability Rating: 1 Math
Objective 82 Grade 2-3

MAJOR CATEGORY: Operations and Their Properties
SUB-CATEGORY: Commutative Property of Multiplication

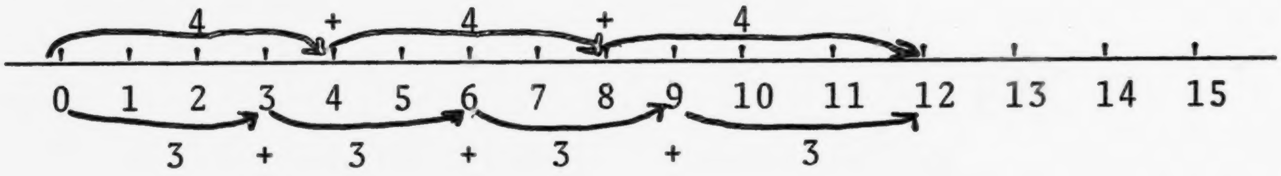
OBJECTIVE: Given a 2 factor multiplication problem, the student will demonstrate the Commutative Property on the number line.

SAMPLE ITEM:

Demonstrate the Commutative Property of multiplication on the number line for the following problem:

3 x 4 = 12

Answer:



ITEM 1

IOX Acceptability Rating: 1 Math

Objective 83 Grade 3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Addition of Measures (Linear, Liquid, Weight...) With Regrouping

OBJECTIVE: Given an addition problem in measures (linear, liquid, weight, etc.), the student will write the sum in simplest form.

SAMPLE ITEMS:

Write the sum in simplest form. 2 ft. 6 in. +2 ft. 7 in. ANSWER: 1 yd. 2 ft. 1 in. ITEM 1	Write the sum in simplest form. 3 lb. 8 oz. +4 lb. 8 oz. ANSWER: 8 lb. ITEM 2
Write the sum in simplest form. 3 qt. 3 pt. +2 qt. 3 pt. ANSWER: 2 gallons ITEM 3	Write the sum in simplest form. 4 ft. 11 in. +1 ft. 5 in. ANSWER: 2 yd. 4 in ITEM 4

IOX Acceptability Rating: 1
Objective 84

Math
Grade 3

MAJOR CATEGORY: Operation and Their Properties

SUB-CATEGORY: Subtraction of Measures (Linear, Liquid, Weight...) Without Regrouping

OBJECTIVE: Given a subtraction problem in measures (liquid, linear, weight, etc.), the student will write the difference.

SAMPLE ITEMS:

Write the difference

2 ft. 8 in.
-1 ft. 9 in.

ANSWER: 11 in.

ITEM 1

Write the difference.

4 lb. 5 oz.
-2 lb. 6 oz.

ANSWER: 1 lb. 15 oz.

ITEM 2

Write the difference.

4 qt. 1 pt.
-3 qt. 2 pt.

ANSWER: 1 pt.

ITEM 3

Write the difference.

3 ft. 6 in.
-2 ft. 10 in.

ANSWER: 8 in.

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 85 Grade 3

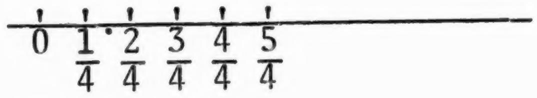
MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Addition of Fractions

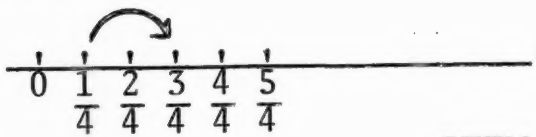
OBJECTIVE: Given two fractions and a number line, the student will indicate the sum on the number line.

SAMPLE ITEMS:

Draw lines on the number line to show the sum of $\frac{1}{4}$ and $\frac{2}{4}$ and write the sum.


0 1/4 2/4 3/4 4/4 5/4

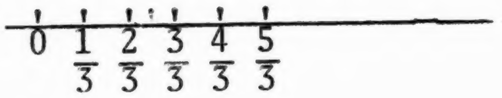
ANSWER:


0 1/4 2/4 3/4 4/4 5/4

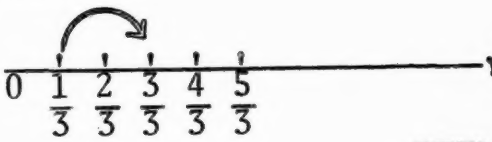
, $\frac{3}{4}$

ITEM 1

Draw lines on the number line to show the sum of $\frac{1}{3}$ and $\frac{2}{3}$ and write the sum.


0 1/3 2/3 3/3 4/3 5/3

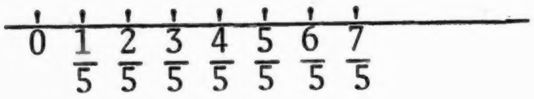
ANSWER:


0 1/3 2/3 3/3 4/3 5/3

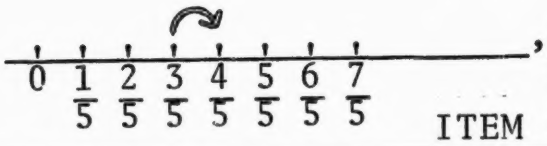
, $\frac{3}{3}$

ITEM 2

Draw lines on the number line to show the sum of $\frac{3}{5}$ and $\frac{1}{5}$ and write the sum.


0 1/5 2/5 3/5 4/5 5/5 6/5 7/5

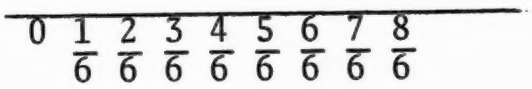
ANSWER:


0 1/5 2/5 3/5 4/5 5/5 6/5 7/5

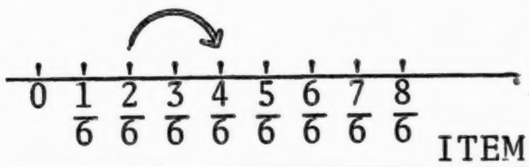
, $\frac{4}{5}$

ITEM 3

Draw lines on the number line to show the sum of $\frac{2}{6} + \frac{2}{6}$ and write the sum.


0 1/6 2/6 3/6 4/6 5/6 6/6 7/6 8/6

ANSWER:


0 1/6 2/6 3/6 4/6 5/6 6/6 7/6 8/6

, $\frac{4}{6}$

ITEM 4

IOX Acceptability Rating: 1
Objective 86

Math
Grade 3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Associative Property of Multiplication

OBJECTIVE: Given the product of three one-digit numbers, the student will use the Associative property to regroup the factors and then state the final product.

SAMPLE ITEMS:

Re-write the problem using the Associative property of multiplication and then state the answer.

$(3 \times 4) \times 2 =$

ANSWER:

$$\begin{aligned}(3 \times 4) \times 2 &= 3 \times (4 \times 2)\\ &= 3 \times 8\\ &= 24\end{aligned}$$

ITEM 1

Re-write the problem using the Associative property of multiplication and then state the answer.

$(4 \times 5) \times 2 =$

ANSWER:

$$\begin{aligned}(4 \times 5) \times 2 &= 4 \times (5 \times 2)\\ &= 4 \times 10\\ &= 40\end{aligned}$$

ITEM 2

Re-write the problem using the Associative property of multiplication and then state the answer.

$6 \times (3 \times 4) =$

ANSWER:

$$\begin{aligned}6 \times (3 \times 4) &= (6 \times 3) \times 4\\ &= 18 \times 4\\ &= 72\end{aligned}$$

ITEM 3

Re-write the problem using the Associative propery of multiplication and then state the answer.

$4 \times (5 \times 3) =$

ANSWER:

$$\begin{aligned}4 \times (5 \times 3) &= (4 \times 5) \times 3\\ &= 20 \times 3\\ &= 60\end{aligned}$$

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 87 Grade 3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Cross Products (Pairing)

OBJECTIVE: Given a pair of sets, the student will identify possible pairings.

SAMPLE ITEM:

How many boy-girl matchings can be made by pairing the girls and the boys? Draw lines to match the possible pairings.

a.

b.

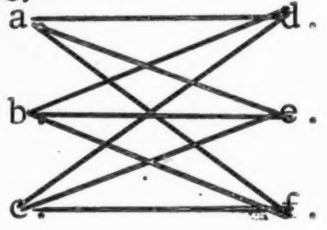
c.

d.

e.

f.

Answer:



ITEM 1

IOX Acceptability Rating: 1 Math

Objective 88 Grade 3

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Through Dividends of 99 With 1-Digit Divisors

OBJECTIVE: Given a division problem with dividends up to 99 with one-digit divisors, the student will write the quotient.

SAMPLE ITEMS:

Find the quotient. $3\overline{)12}$ ANSWER: 4 ITEM 1	Find the quotient. $4\overline{)56}$ ANSWER: 14 ITEM 2
Find the quotient. $5\overline{)90}$ ANSWER: 18 ITEM 3	Find the quotient. $6\overline{)36}$ ANSWER: 6 ITEM 4

IOX Acceptability Rating: 1

Math

Grade 3

Objective 89

MAJOR CATEGORY: Operations and Their Properties

SUB-CATEGORY: Identity Element For Division

OBJECTIVE: Given a division problem in which the divsor is the identity element (1), the student will write the quotient.

SAMPLE ITEMS:

Fill in the missing blank. 5 ÷ 1 = _____ ANSWER: 5 ITEM 1	Fill in the missing blank. 6 ÷ 1 = _____ ANSWER: 6 ITEM 2
Fill in the missing blank. 3 ÷ 1 = _____ ANSWER: 3 ITEM 3	Fill in the missing blank. 10 ÷ 1 = _____ ANSWER: 10 ITEM 4

IOX Acceptability Rating: 1 Math

Objective 90 Grade K-2

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Money: Penny, Nickel, Dime, Quarter
Half-Dollar, Dollar

OBJECTIVE: Given an amount of money in one unit of measure, the student will state its equivalence in another unit of measure.

SAMPLE ITEMS:

Write the numeral in each ☐.

15 (1¢) = ☐ (10¢), ☐ (5¢)

Answer:

$\boxed{1}$ (10¢), $\boxed{1}$ (5¢)

ITEM 1

Write the numeral in each ☐.

35 (1¢) = ☐ (10¢), ☐ (5¢)

Answer:

$\boxed{3}$ (10¢), $\boxed{1}$ (5¢)

ITEM 2

Write the numeral in each ☐.

36 (1¢) = ☐ (10¢), ☐ (5¢), ☐ (1¢)

Answer:

$\boxed{3}$ (10¢), $\boxed{1}$ (5¢), $\boxed{1}$ (1¢)

ITEM 3

Write the numeral in each ☐.

29 (1¢) = ☐ (10¢), ☐ (5¢), ☐ (1¢)

Answer:

$\boxed{2}$ (10¢), $\boxed{1}$ (5¢), $\boxed{4}$ (1¢)

ITEM 4

IOX Acceptability Rating: 1

Math

Objective 91

Grade K-2

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Comparison of Weights

OBJECTIVE: Given two objects, the student will hold them in his hands and state which is the heavier.

SAMPLE ITEM: Hold the two objects in your hands and state which is heavier.

Answer: Answers will vary.

ITEM 1

IOX Acceptabiltiy Rating: 1 Math

Objective 92 Grade K-2

MAJOR CATEGORY: Measurement

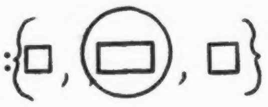
SUB-CATEGORY: Comparison: Long vs. Short

OBJECTIVE: Given a set of objects, the student will compare the size of the members by finding the longest and/or shortest.

SAMPLE ITEMS:

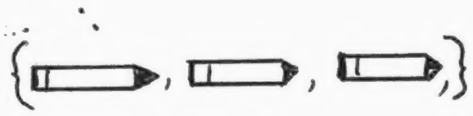
Circle the longest member of the set.

Answer:

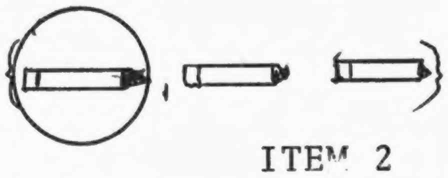


ITEM 1

Circle the longest member of the set.

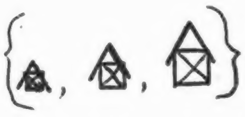


Answer:

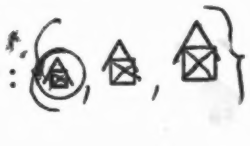


ITEM 2

Circle the shortest member of the set.

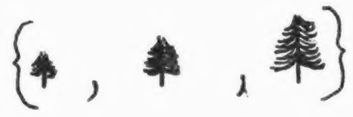


Answer:

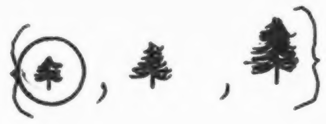


ITEM 3

Circle the shortest member of the set.



Answer:



ITEM 4

IOX Acceptability Rating: 1

Objective 93

Math

Grade K-3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Use of Non-Standard Unit

OBJECTIVE: Given an object, the student will measure its size using a device other than a standard unit of measure.

SAMPLE ITEM:

Find the approximate length of this room without using a ruler. (e.g., 34 shoe lengths)

Answer: Answers will vary.

ITEM 1

IOX Acceptability Rating: 1

Objective 94

Math

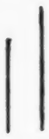
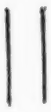
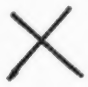
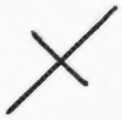
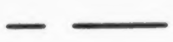
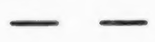
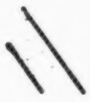
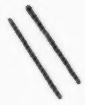
Grade 1-2

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Comparison of Lengths

OBJECTIVE: Given a group of pairs of line segments, the student will identify those pairs with segments of the same length.

SAMPLE ITEMS:

Draw a circle around the pair of line segments that have the same length. a.  b.  Answer: b. ITEM 1	Draw a circle around the pair of line segments that have the same length. a.  b.  Answer: a. ITEM 2
Draw a circle around the pair of line segments that have the same length. a.  b.  Answer: b. ITEM 3	Draw a circle around the pair of line segments that have the same length. a.  b.  Answer: b ITEM 4

IOX Acceptability Rating: 1

Objective 95

Math

Grade 1-2

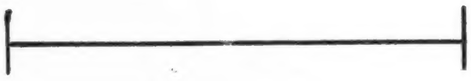
MAJOR CATETORY: Measurement

SUB-CATEGORY: Rounding to Nearest Inch

OBJECTIVE: Given a 12" ruler marked with fractions of inches, and an object to be measured, the student will be able to measure the object to the nearest inch.

SAMPLE ITEMS:

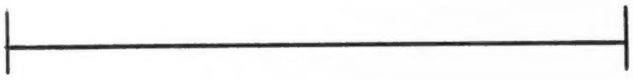
Measure the following object to the nearest inch with your ruler. Write the answer.



Answer: 2 in.

ITEM 1

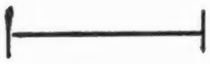
Measure the following object to the nearest inch with your ruler. Write the answer.



Answer: 3 in.

ITEM 2

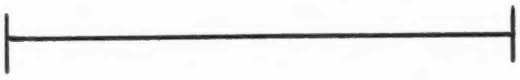
Measure the following object to the nearest inch with your ruler. Write the answer.



Answer: 1 in.

ITEM 3

Measure the following object to the nearest inch with your ruler. Write the answer.



Answer: 2 in.

ITEM 4

IOX Acceptability Rating: 1

Objective 96

Math

Grade 1-2

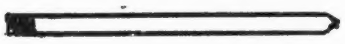
MAJOR CATEGORY: Measurement

SUB-CATEGORY: Round to Nearest 1/2 inch

OBJECTIVE: Given a 12" ruler marked with fractions of inches and an object to be measured, the student will measure the object to the nearest 1/2 inch.

SAMPLE ITEMS:

Measure the following object to the nearest 1/2" with your ruler. Write the answer.



Answer: 1-1/2 in.

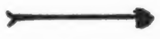
ITEM 1

Measure the following object to the nearest 1/2" with your ruler. Write the answer.

Answer: 2-1/2 in.

ITEM 2

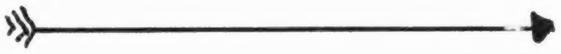
Measure the following object to the nearest 1/2" with your ruler. Write the answer.



Answer: 1/2 in.

ITEM 3

Measure the following object to the nearest 1/2" with your ruler. Write the answer.



Answer: 2-1/2 in.

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 97 Grade 1-2

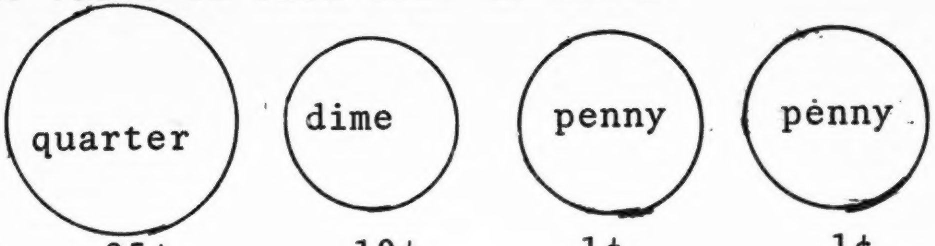
MAJOR CATEGORY: Measurement

SUB-CATEGORY: Money: Nickel, Dime, Quarter

OBJECTIVE: Given groups of pennies, nickels, dimes and quarters, the student will identify each one by naming its value in cents.

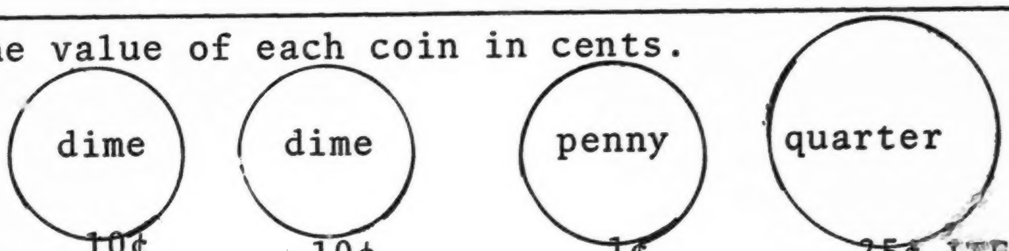
SAMPLE ITEMS:

Tell the value of each coin in cents.


quarter
dime
penny
penny

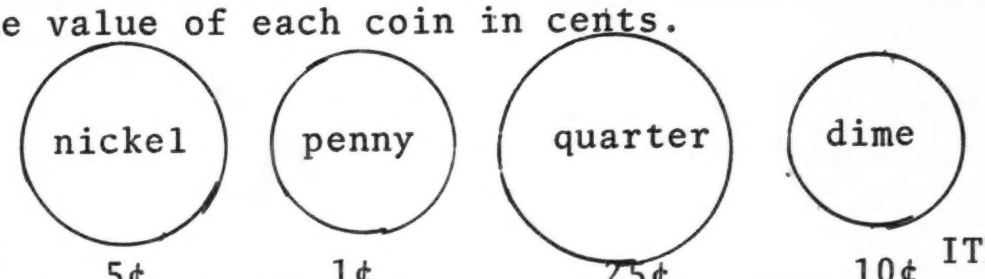
Answer: 25¢ 10¢ 1¢ 1¢ ITEM 1

Tell the value of each coin in cents.


dime
dime
penny
quarter

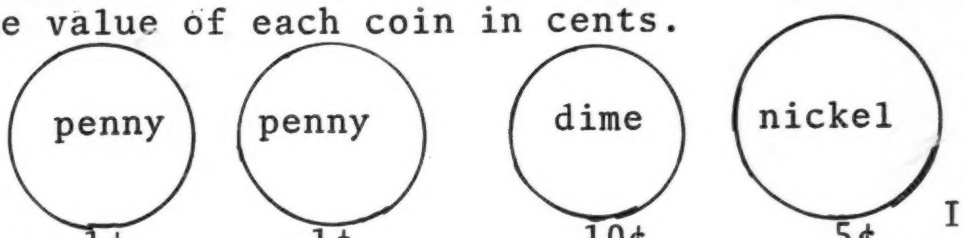
Answer: 10¢ 10¢ 1¢ 25¢ ITEM 2

Tell the value of each coin in cents.


nickel
penny
quarter
dime

Answer: 5¢ 1¢ 25¢ 10¢ ITEM 3

Tell the value of each coin in cents.


penny
penny
dime
nickel

Answer: 1¢ 1¢ 10¢ 5¢ ITEM 4

IOX Acceptability Rating: 1

Math

Objective 98

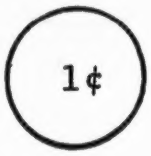
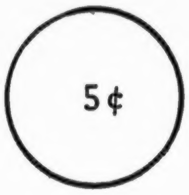
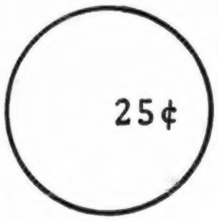
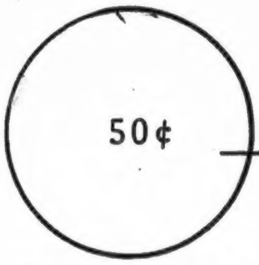
Grade 1-3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Money: Penny, Nickel, Dime, Quarter, Half-Dollar, Dollar

OBJECTIVE: Given a picture of a coin, the student will identify it.

SAMPLE ITEMS:

Write the name of the coin.  ____________ Answer: Penny ITEM 1	Write the name of the coin.  ________________ Answer: Nickel ITEM 2
Write the name of the coin.  ______________ Answer: Quarter ITEM 3	Write the name of the coin.  _________________ Answer: Half-dollar ITEM 4

IOX Acceptability Rating: 1 Math

Objective 99 Grade 1-3

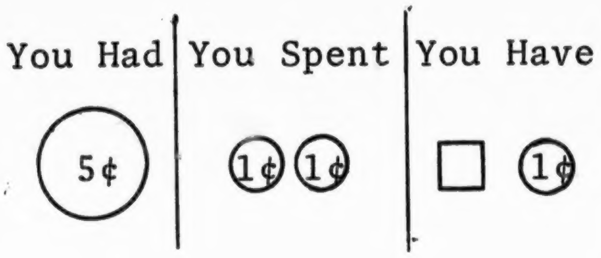
MAJOR CATEGORY: Measurement

SUB-CATEGORY: Money: Penny, Nickel, Dime, Quarter, Half-Dollar, Dollar

OBJECTIVE: Given an amount of money and the price of an item to be purchased, the student will state the amount of change he should receive after the purchase.

SAMPLE ITEM:

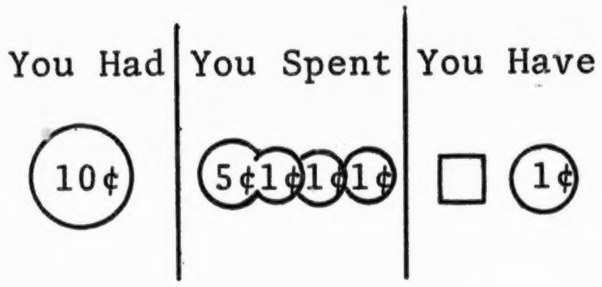
Write the numeral in the ☐.


You Had
You Spent
You Have
5¢
1¢
1¢
☐
1¢

Answer: 3

ITEM 1

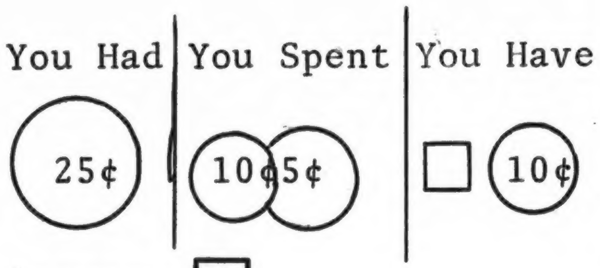
Write the numeral in the ☐.


You Had
You Spent
You Have
10¢
5¢
1¢
1¢
1¢
☐
1¢

Answer: 2

ITEM 2

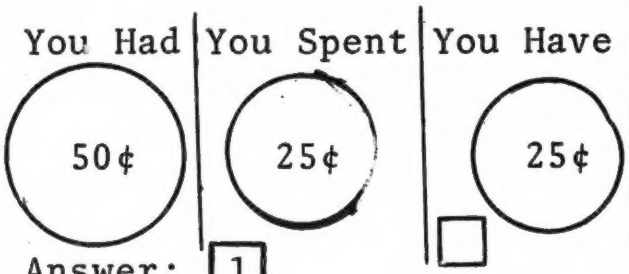
Write the numeral in the ☐.


You Had
You Spent
You Have
25¢
10¢
5¢
☐
10¢

Answer: 1

ITEM 3

Write the numeral in the ☐.


You Had
You Spent
You Have
50¢
25¢
☐
25¢

Answer: 1

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 100 Grade 1-3

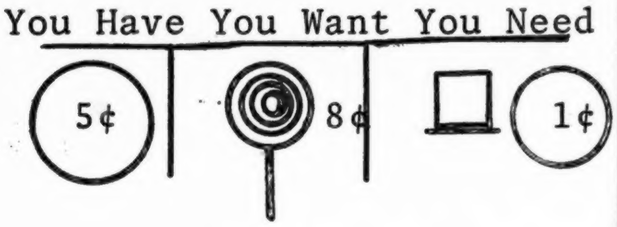
MAJOR CATEGORY: Measurement

SUB-CATEGORY: Money: Penny, Nickel, Dime, Quarter, Half-Dollar, Dollar

OBJECTIVE: Given an amount of money and the price of an item to be purchased which exceeds the given amount of money, the student will state the additional amount of money needed to make the purchase.

SAMPLE ITEMS:

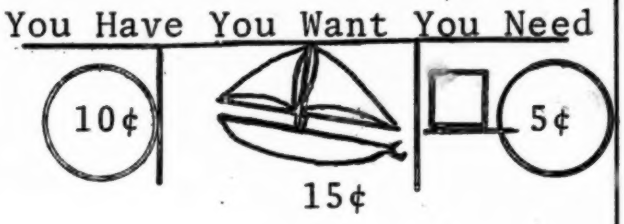
Write the numeral in the ☐.


You Have
You Want
You Need
5¢
8¢
1¢

Answer: 3

ITEM 1

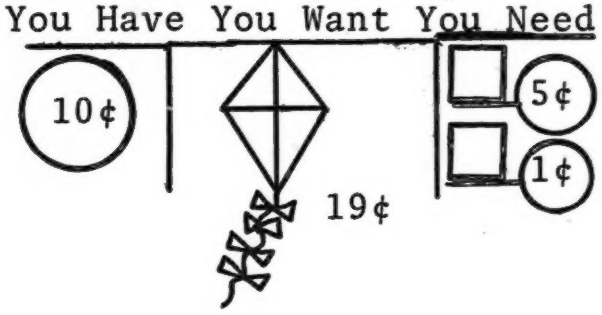
Write the numeral in the ☐.


You Have
You Want
You Need
10¢
15¢
5¢

Answer: 1

ITEM 2

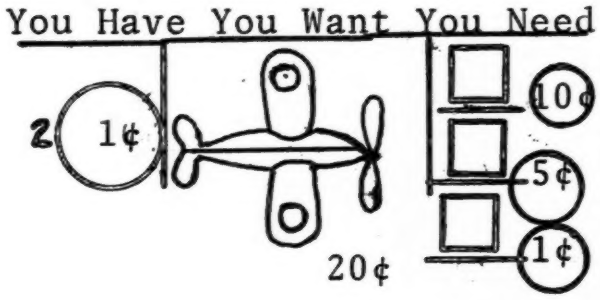
Write the numeral in each ☐.


You Have
You Want
You Need
10¢
19¢
5¢
1¢

Answer: 1 5¢, 4 1¢

ITEM 3

Write the numeral in each ☐.


You Have
You Want
You Need
2
1¢
20¢
10¢
5¢
1¢

Answer: 1 10¢, 1 5¢
4 1¢

ITEM 4

IOX Acceptability Rating: 1

Objective 101

Math

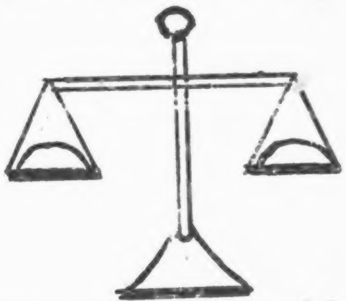
Grade 1-3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Weights and Balances

OBJECTIVE: Given a balance and 2 objects of unequal weight, the student will identify which object is heavier and which is lighter.

SAMPLE ITEM: Here is a balance and 2 objects. Weigh them and state which object is heavier.



Answer: Answers will vary.

ITEM 1

IOX Acceptability Rating: 1

Objective 102

Math

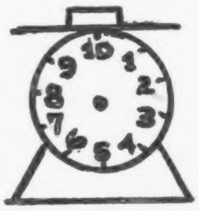
Grade 1-3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Weights and Balances

OBJECTIVE: Given a scale and an object to be weighed, the student will weigh the object and state its value to the nearest pound.

SAMPLE ITEM: Here is a scale with an object to be weighed.



Answer: Answer will vary.

ITEM 1

IOX Acceptability Rating: 1 Math

Objective 103 Grade 1-3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Linear: Inch, Foot

OBJECTIVE: The student will measure a given line segment or object to the nearest whole unit with a standard foot ruler.

SAMPLE ITEMS: (not to scale)

Measure this line with your ruler. Write how many inches it is. /——————————/ Answer: 5 in. ITEM 1	Measure this line with your ruler. Write how many inches it is. /——————/ Answer: 3 in. ITEM 2
Measure this line with your ruler. Write how many inches it is. /————————————/ Answer: 6 in. ITEM 3	Measure this line with your ruler. Write how many inches it is. /————/ Answer: 1 in. ITEM 4

IOX Acceptability Rating: 1

Objective 104

Math

Grade 1-3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Inch

OBJECTIVE: Given two line segments of unequal length, the student will state the number of inches that one segment is longer than the other and vice versa.

SAMPLE ITEMS: (not to scale)

Write the proper numeral in each ☐.

A. 4" B. 3"

A is ☐ inch(es) longer than B.

Answer: $\boxed{1}$

ITEM 1

Write the proper numeral in each ☐.

A 5" B 3"

A is ☐ inch(es) longer than B.

Answer: $\boxed{2}$

ITEM 2

Write the proper numeral in each ☐.

A 3" B 2"

B is ☐ inch(es) shorter than A.

Answer: $\boxed{1}$

ITEM 3

Write the proper numeral in each ☐.

A 6" B 3"

B is ☐ inch(es) shorter than A.

Answer: $\boxed{3}$

ITEM 4

IOX Acceptability Rating: 1

Objective 105

Math

Grade 1-3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Linear: Inch, Foot, Yard

> **OBJECTIVE:** Given a unit of measure (inch, foot,yard), the student will state the equivalence in another given unit of measure.

SAMPLE ITEM:

Write the numeral in each ☐. 24 inches = ☐ feet Answer: $\boxed{2}$ ITEM 1	Write the numeral in each ☐. 6 feet = ☐ yards Answer: $\boxed{2}$ ITEM 2
Write the numeral in each ☐. 36 inches = ☐ feet Answer: $\boxed{3}$ ITEM 3	Write the numeral in each ☐. 9 feet = ☐ yards Answer: $\boxed{3}$ ITEM 4

IOX Acceptability Rating: 1

Math

Objective 106

Grade 1-3

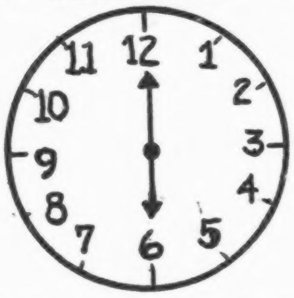
MAJOR CATEGORY: Measurement

SUB-CATEGORY: Time: Quarter-Hour, Half-Hour Hour

OBJECTIVE: Given a picture of a clock, the student will tell the time to the quarter-hour, half-hour, or hour, as represented on the clock.

SAMPLE ITEMS:

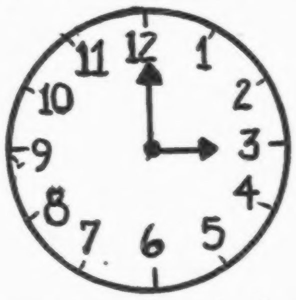
Here is a clock.
Tell what time it is.



Answer: 6 o'clock

ITEM 1

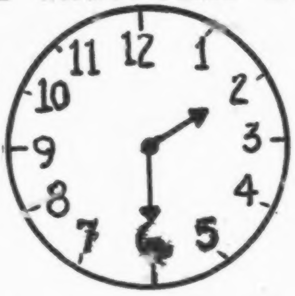
Here is a clock.
Tell what time it is.



Answer: 3 o'clock

ITEM 2

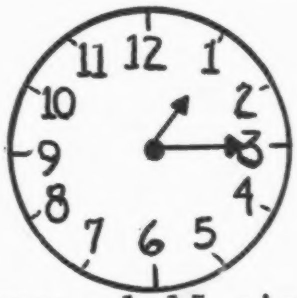
Here is a clock.
Tell what time it is.



Answer: 2:30 o'clock

ITEM 3

Here is a clock.
Tell what time it is.



Answer: 1:15 o'clock

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 107 Grade 1-3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Time: Quarter-Hour, Half-Hour Hour

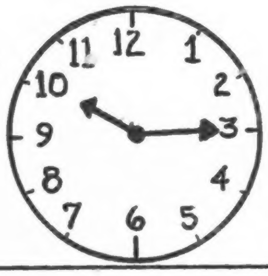
OBJECTIVE: Given a time to the quarter-hour, half-hour, or hour, the student will place the hands on the clock to show the given time.

SAMPLE ITEMS:

Show the time:

10:15

Answer:

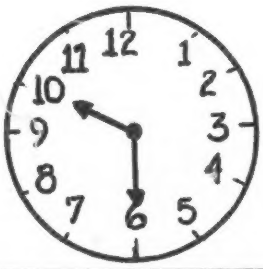


ITEM 1

Show the time:

10:30

Answer:

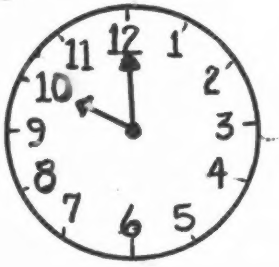


ITEM 2

Show the time:

10:00

Answer:

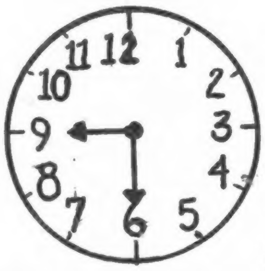


ITEM 3

Show the time:

9:30

Answer:



ITEM 4

IOX Acceptability Rating: 1

Objective 108

Math

Grade 1-3

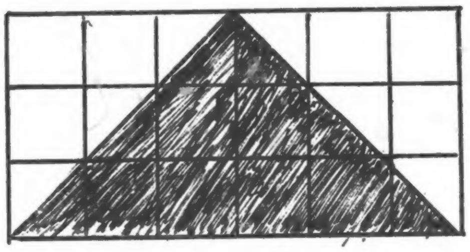
MAJOR CATEGORY: Measurement

SUB-CATEGORY: Area on a square unit grid

OBJECTIVE: Given a region on a square unit grid, the student will state the number of square units it contains.

SAMPLE ITEMS:

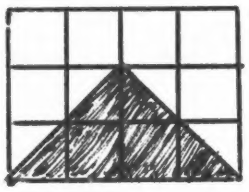
State the number of square units in the region.



Answer: 9 square units

ITEM 1

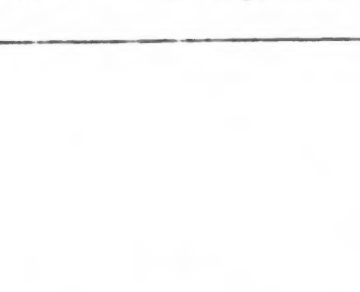
State the number of square units in the region.



Answer: 4 square units

ITEM 2

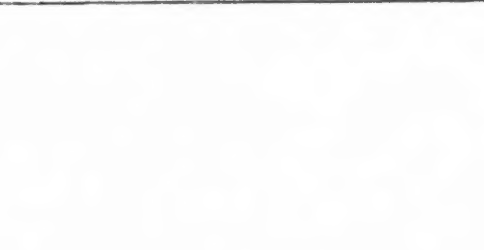
State the number of square units in the region.



Answer: 8 square units

ITEM 3

State the number of square units in the region.



Answer: 2 square units

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 109 Grade 1-3

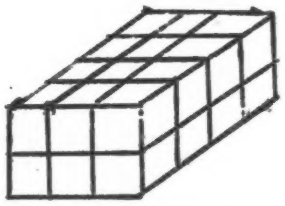
MAJOR CATEGORY: Measurement

SUB-CATEGORY: Volume

OBJECTIVE: Given a rectangular solid with square units marked, the student will state the volume in cubic units.

SAMPLE ITEMS:

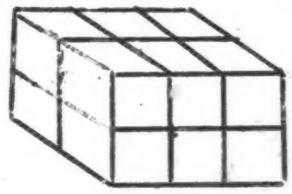
State the number of cubic units in the rectangular solid.



Answer: 24 cubic units

ITEM 1

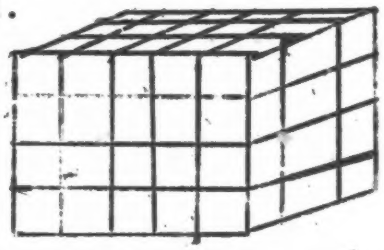
State the number of cubic units in the rectangular solid.



Answer: 12 cubic units

ITEM 2

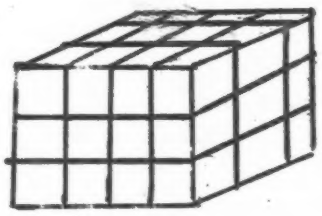
State the number of cubic units in the rectangular solid.



Answer: 60 cubic units

ITEM 3

State the number of cubic units in the rectangular solid.



Answer: 36 cubic units

ITEM 4

IOX Acceptability Rating: 1

Objective 110

Math

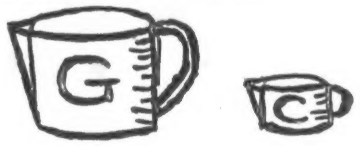
Grade 1-3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Volume-Liquid Measure-- Number of Cups in Pint, Quart, and Gallon

OBJECTIVE: Given a pint, quart or gallon container and a measuring cup, the student will physically measure and state the number of cups in the container.

SAMPLE ITEM: Take this gallon container, measure with a cup and state the number of cups it takes to fill the container.



Answer: Answers will vary.

ITEM 1

IOX Acceptability Rating: 1 Math

Objective 111 Grade 1-3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Liquid Volume: Cup, Pint Quart, Gallon,....

OBJECTIVE: Given a unit of measure (cup, pint, quart, gallon, etc.), the student will state the equivalence in another given unit of measure.

SAMPLE ITEMS:

Write the numeral in each ☐.

2 pints make ☐ cups.

Answer: $\boxed{4}$

ITEM 1

Write the numeral in each ☐.

4 cups make ☐ pints.

Answer: $\boxed{2}$

ITEM 2

Write the numeral in each ☐.

4 pints make ☐ quarts.

Answer: $\boxed{2}$

ITEM 3

Write the numeral in each ☐.

1 quart makes ☐ pints.

Answer: $\boxed{2}$

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 112 Grade 2-3

MAJOR CATEGORY: Measurement

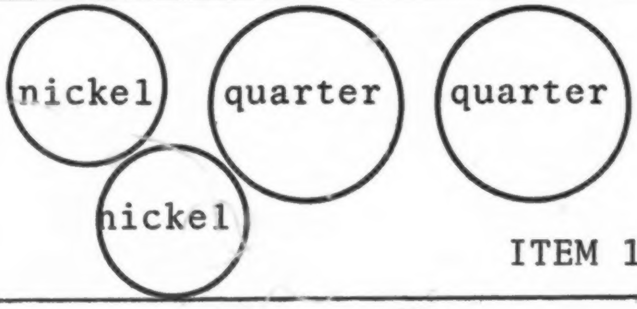
SUB-CATEGORY: Money: Penny, Nickel, Dime, Quarter

OBJECTIVE: Given a set of coins (pennies, nickels, dimes, quarters), the student will determine the total value of the set and write it in both cents and decimal notation.

SAMPLE ITEMS:

Here is a group of coins. Write their total value in both cents and decimal notation.

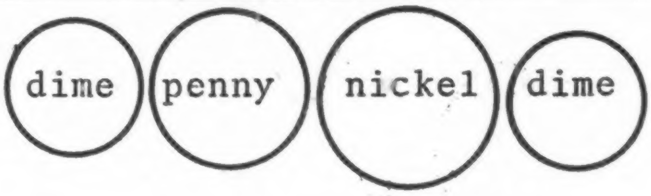
Answer: 60¢, $.60


nickel
quarter
quarter
nickel

ITEM 1

Here is a group of coins. Write their total value in both cents and decimal notation.

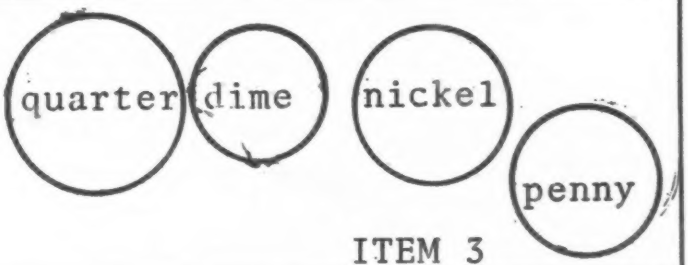
Answer: 26¢, $.26


dime
penny
nickel
dime

ITEM 2

Here is a group of coins. Write their total value in both cents and decimal notation.

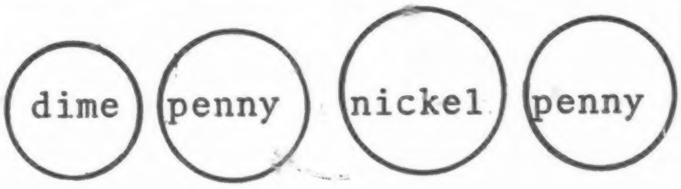
Answer: 41¢, $.41


quarter
dime
nickel
penny

ITEM 3

Here is a group of coins. Write their total value in both cents and decimal notation.

Answer: 17¢, $.17


dime
penny
nickel
penny

ITEM 4

IOX Acceptability Rating: 1

Objective 113

Math

Grade 2-3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Constructions

OBJECTIVE: Given an inch unit ruler, the student will construct a line segment of a specified length designated to the nearest whole inch.

SAMPLE ITEMS: (not to scale)

Draw a line segment 5 inches long.

Answer: /——5"——/

ITEM 1

Draw a line segment 2 inches long.

Answer: /——2"——/

ITEM 2

Draw a line segment 3 inches long.

Answer: /——3"——/

ITEM 3

Draw the line segments $\overline{AB}$, 3 inches long, and $\overline{CD}$, 1 inch long.

Answer: A————B

C——D

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 114 Grade 2-3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Approximate & Exact Measurement

OBJECTIVE: Given a statement regarding measurement, the student will say whether it is approximate or exact.

SAMPLE ITEMS:

Is the statement approximate or exact? Mary has 3 apples. Answer: Exact ITEM 1	Is the statement approximate or exact? Terry is about 4 feet tall. Answer: Approximate ITEM 2
Is this statement approximate or exact? Art has 2 candy bars. Answer: Exact ITEM 3	Is this statement approximate or exact? Paula is about 6 feet tall. Answer: Approximate ITEM 4

IOX Acceptability Rating: 1 Math

Objective 115 Grade 2-3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Time: Day, Week, Month, Year

OBJECTIVE: Given an amount of time in one unit, the student will state its equivalence in another given unit of measure.

SAMPLE ITEMS:

How many days are there in a week? Answer: 7 days ITEM 1	How many weeks are there in a month? Answer: 4 weeks ITEM 2
How many weeks are there in a year? Answer: 52 weeks ITEM 3	How many months are there in a year? Answer: 12 months ITEM 4

IOX Acceptability Rating: 1 Math

Objective 116 Grade 2-3

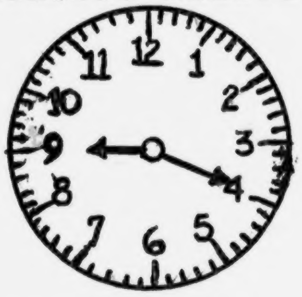
MAJOR CATEGORY: Measurement

SUB-CATEGORY: Time: Clock, Minute

OBJECTIVE: Given a clock, the student will state the time to the nearest minute.

SAMPLE ITEM:

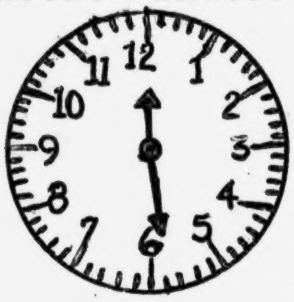
State the time to the nearest minute.



Answer 9:19

ITEM 1

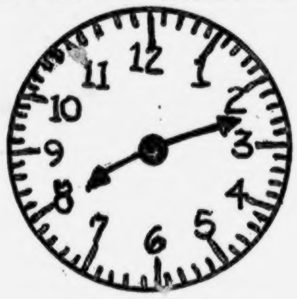
State the time to the nearest minute.



Answer: 12:29

ITEM 2

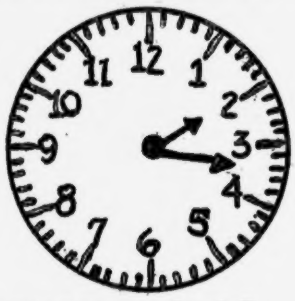
State the time to the nearest minute.



Answer: 8:12

ITEM 3

State the time to the nearest minute.



Answer: 2:17

ITEM 4

IOX Acceptability Rating: 1

Objective 117

Math

Grade 2-3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Time: Second, Minute, Hour, Day

OBJECTIVE: Given an amount of time in one unit, the student will state its equivalence in another unit of time.

SAMPLE ITEMS:

How many minutes are there in 2 hours.

Answer: 120 min.

ITEM 1

How many hours are there in one day?

Answer: 24 hours

ITEM 2

How many seconds are there in three minutes?

Answer: 180 seconds

ITEM 3

How many hours are there in two days?

Answer: 48 hours

ITEM 4

IOX Acceptability Rating: 1 — Math

Objective 118 — Grade 2-3

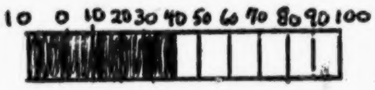
MAJOR CATEGORY: Measurement

SUB-CATEGORY: Temperature: Thermometer, Degree Farenheit

OBJECTIVE: Given a standard Farenheit thermometer, the student will identify the temperature to the nearest whole degree.

SAMPLE ITEMS:

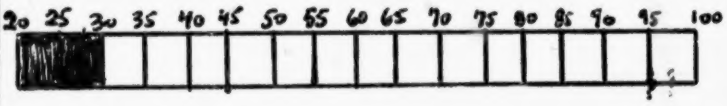
Tell the temperature reading on this thermometer.


10 0 10 20 30 40 50 60 70 80 90 100

Answer: 40°F

ITEM 1

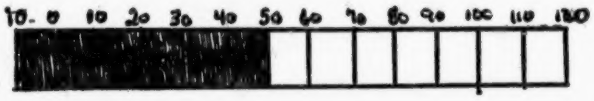
Tell the temperature reading on this thermometer.


20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

Answer: 30°F

ITEM 2

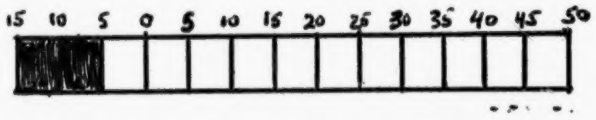
Tell the temperature reading on this thermometer.


10- 0 10 20 30 40 50 60 70 80 90 100 110 120

Answer: 50°F

ITEM 3

Tell the temperature reading on this thermometer.


15 10 5 0 5 10 15 20 25 30 35 40 45 50

Answer: 5°F below 0

ITEM 4

IOX Acceptability Rating: 1

Math

Objective 119

Grade 2-3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Comparison of Units
Conversion of Units

OBJECTIVE: Given two disjoint units of like measurement, the student will compare the measurements and state the relationship between the two units.

SAMPLE ITEMS:

Underline the correct answer within the parentheses and tell the reason for your choice.

"1 gallon is (more, less) than 2 quarts."

Answer: more
4 qts.= 1 gal.

ITEM 1

Underline the correct answer within the parentheses and tell the reason for your choice.

"1 foot is (longer, shorter) than 10 inches."

Answer: longer
12" = 1'

ITEM 2

Underline the correct answer within the parentheses and tell the reason for your choice.

"2 dimes are (less, more) than 2 nickels."

Answer: more
2 nickles = 1 dime

ITEM 3

Underline the correct answer within the parentheses and tell the reason for your choice.

"24 inches are (more, less) than 3 feet."

Answer: less
36 in. = 3 ft.

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 120 Grade 3

MAJOR CATEGORY: Measurement

SUB-CATEGORY: Metric System (centimeters)

OBJECTIVE: Given an object the student will measure and state its length in centimeters.

SAMPLE ITEM: Measure the object given and state its length correctly to the nearest centimeter.

Answer: Answers will vary.

ITEM 1

IOX Acceptability Rating: 1 | Math

Objective 121 | Grade K-1

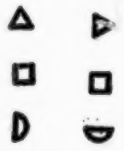
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Curves: Closed, Triangle, Rectangle Square, Circle

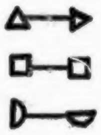
OBJECTIVE: Given two lists of closed curves, the student will match each closed curve according to shape.

SAMPLE ITEMS:

Draw lines to match the shapes.

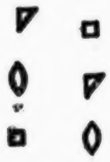


Answer:

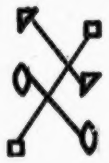


ITEM 1

Draw lines to match the shapes.

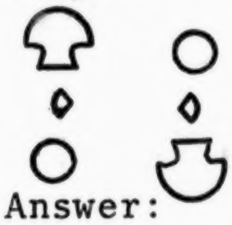


Answer:

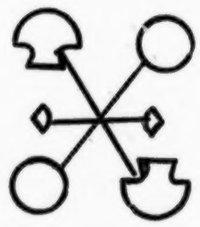


ITEM 2

Draw lines to match the shapes.

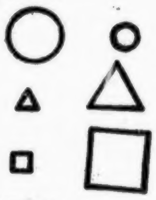


Answer:

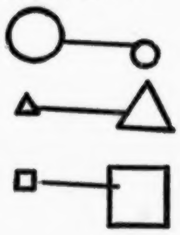


ITEM 3

Draw lines to match the shapes.



Answer:



ITEM 4

IOX Acceptability Rating: 1 Math

Objective 122 Grade K-1

MAJOR CATEGORY: Geometry

SUB-CATEGORY: Plane Figures--Circle, Square Rectangle, Triangle

OBJECTIVE: Given models of circles, squares, rectangles, and triangles, the student will identify each of these plane geometric figures.

SAMPLE ITEMS:

Tell which of the following is a circle.

a.

b.

c.

Answer: c

ITEM 1

Tell which of the following is a square.

a.

b.

c.

Answer: b

ITEM 2

Tell which of the following is a triangle.

a.

b.

c.

Answer: a

ITEM 3

Tell which of the following is a rectangle.

a.

b.

c.

Answer: c

ITEM 4

IOX Acceptability Rating: 1 | Math

Objective 123 | Grade K-2

MAJOR CATEGORY: Geometry

SUB-CATEGORY: Circles, Triangles
Squares, Rectangles

OBJECTIVE: Given a physical object or a drawing, the student will identify circles, triangles, rectangles, and squares.

SAMPLE ITEM:

Point out the circles, squares, rectangles, and triangles you see in this picture.
(Teacher should supply object or picture).

Answer: Teacher to determine.

ITEM 1

IOX Acceptability Rating: 1 Math

Objective 124 Grade K-3

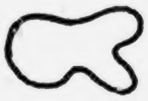
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Curves: Open, Closed

OBJECTIVE: Given a curve, the student will identify it as being closed or open.

SAMPLE ITEMS:

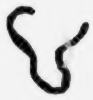
Write C in the ☐ if the curve is closed and O if it is open.



Answer: C

ITEM 1

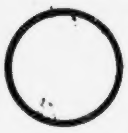
Write C in the ☐ if the curve is closed and O if it is open.



Answer: O

ITEM 2

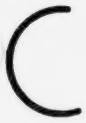
Write C in the ☐ if the curve is closed and O if it is open.



Answer: C

ITEM 3

Write C in the ☐ if the curve is closed and O if it is open.



Answer: O

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 125 Grade K-3

MAJOR CATEGORY: Geometry

SUB-CATEGORY: Curves--Closed, Triangle, Rectangle Square, Circle

OBJECTIVE: Given a geometric figure and a list of properties, the student will match the figure with the proper property.

SAMPLE ITEMS:

Draw a line from the figure to the correct property.

a. 0 sides
△ b. 2 sides
c. 3 sides

Answer: c

ITEM 1

Draw a line from the figure to the correct property.

a. 3 sides
□ b. 4 sides
c. 2 sides

Answer: b

ITEM 2

Draw a line from the figure to the correct property.

a. 0 sides
○ b. 1 side
c. 2 sides

Answer: a

ITEM 3

Draw a line from the figure to the correct property.

a. 2 sides
▭ b. 3 sides
c. 4 sides

Answer: c

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 126 Grade K-3

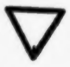
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Curves: Closed, Triangle, Rectangle Square, Circle

OBJECTIVE: Given a closed curve, the student will write its geometrical name.

SAMPLE ITEMS:

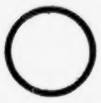
State the name of the closed curve.



Answer: triangle

ITEM 1

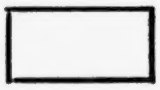
State the name of the closed curve.



Answer: circle

ITEM 2

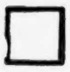
State the name of the closed curve.



Answer: rectangle

ITEM 3

State the name of the closed curve.



Answer: square

ITEM 4

IOX Acceptability Rating

Objective 127

Math

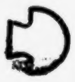
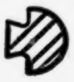
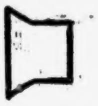
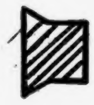
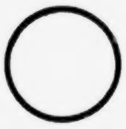
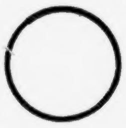
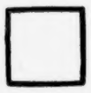
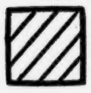
Grade K-3

MAJOR CATEGORY: Geometry

SUB-CATEGORY: Curves: Closed

OBJECTIVE: Given a closed curve, the student will identify the region enclosed by the curve.

SAMPLE ITEMS:

Shade in the region enclosed by the curve.  Answer:  ITEM 1	Shade in the region enclosed by the curve.  Answer:  ITEM 2
Shade in the region enclosed by the curve.  Answer:  ITEM 3	Shade in the region enclosed by the curve.  Answer:  ITEM 4

IOX Acceptability Rating: 1 Math

Objective 128 Grade K-3

MAJOR CATEGORY: Geometry

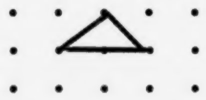
SUB-CATEGORY: Construction

OBJECTIVE: Given a straight edge, the student will draw a recognizable square, rectangle, and triangle.

SAMPLE ITEMS:

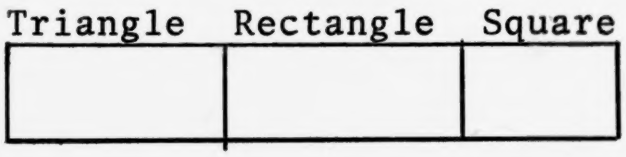
Construct a triangle on the geoboard.

Possible answer:

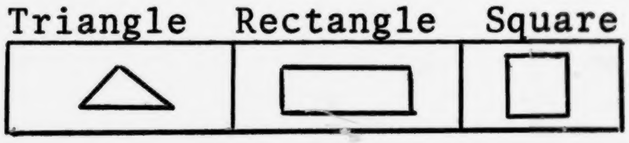


ITEM 1

Draw the figures in the labeled boxes.


Triangle
Rectangle
Square

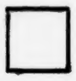
Possible answer:


Triangle
Rectangle
Square

ITEM 2

Construct a square.

Possible answer:



ITEM 3

Construct a triangle.

Possible answer:

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 129 Grade 1-3

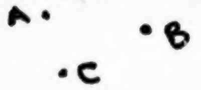
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Curves: Closed

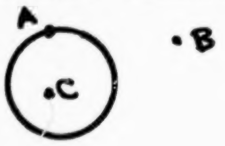
OBJECTIVE: Given a group of labeled points, the student will draw a closed curve with the points on, inside, and outside the curve.

SAMPLE ITEMS:

Draw a closed curve with the points on, inside, and outside the curve.

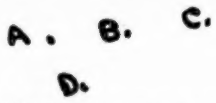


Possible answer:

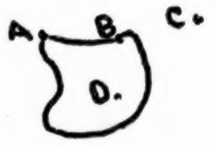


ITEM 1

Draw a closed curve with the points on, inside, and outside the curve.

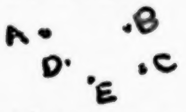


Possible answer:

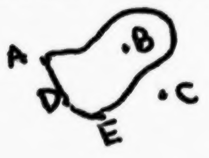


ITEM 2

Draw a closed curve with the points on, inside, and outside the curve.

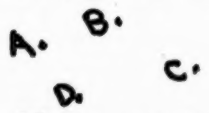


Possible answer:

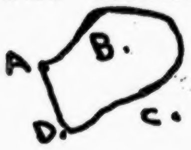


ITEM 3

Draw a closed curve with the points on, inside, and outside the curve.



Possible answer:



ITEM 4

IOX Acceptability Rating: 1 Math

Objective 130 Grade 1-3

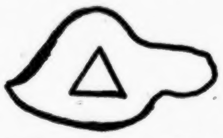
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Curves: Closed

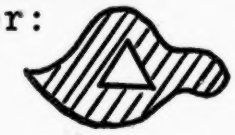
OBJECTIVE: Given a closed curve, the student will identify the region outside the curve.

SAMPLE ITEMS:

Shade in the region outside the curve of the triangle.

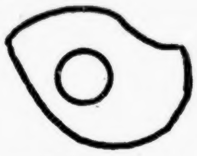


Answer:

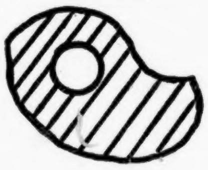


ITEM 1

Shade in the region outside the curve of the circle.

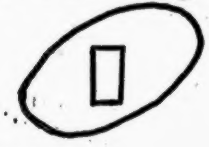


Answer:

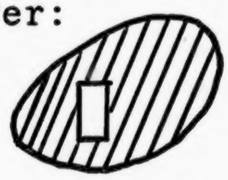


ITEM 2

Shade in the region outside the curve of the rectangle.

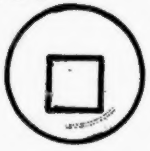


Answer:

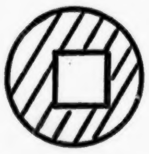


ITEM 3

Shade in the region outside the curve of the square.



Answer:



ITEM 4

IOX Acceptability Rating: 1

Objective 131

Math

Grade 1-3

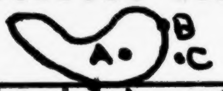
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Interior & Exterior of Regions

OBJECTIVE: Given a closed curve and labeled points inside, outside, and on the curve, the student will state the position of the points in relation to the curve.

SAMPLE ITEMS:

Write the letters in the correct column.



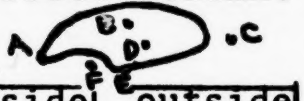
on	inside	outside

Answer:

on	inside	outside
B	A	C

ITEM 1

Write the letters in the correct column.



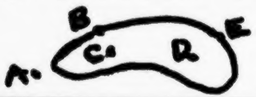
on	inside	outside

Answer:

on	inside	outside
A	B	C
E	D	F

ITEM 2

Write the letters in the correct column.



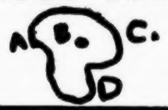
on	inside	outside

Answer:

on	inside	outside
B	C	A
E	D	

ITEM 3

Write the letters in the correct column;



on	inside	outside

Answer:

on	inside	outside
A	B	C
		D

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 132 Grade 1-3

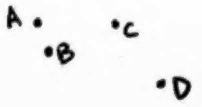
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Distances

OBJECTIVE: Given a set of points in a plane, the student will name the two points that are the closest and the two that are the furthest apart.

SAMPLE ITEMS:

Name the two points that are closest to each other and the two points that are furthest from each other.



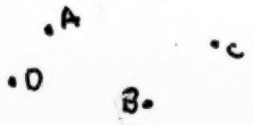
Closest Furthest

Answer: Closest Furthest

A, B A, D

ITEM 1

Name the two points that are closest to each other and the two points that are furthest from each other.



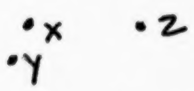
Closest Furthest

Answer: Closest Furthest

A, D D, C

ITEM 2

Name the two points that are closest to each other and the two points that are furthest from each other.



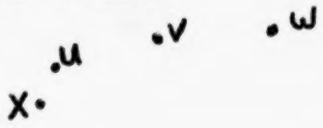
Closest Furthest

Answer: Closest Furthest

X, Y Y, Z

ITEM 3

Name the two points that are closest to each other and the two points that are furthest from each other.



Closest Furthest

Answer: Closest Furthest

U, X X, W

ITEM 4

IOX Acceptability Rating: 1

Objective 133

Math

Grade 1-3

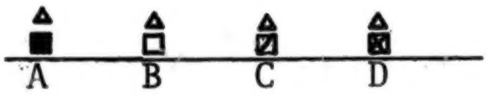
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Points, Lines

OBJECTIVE: Given a line, the student will locate and write the name of the points on the line.

SAMPLE ITEMS:

Locate the houses by naming the points on the line.

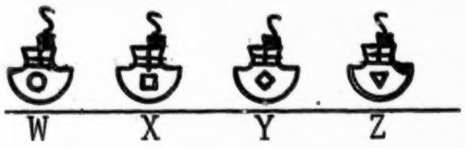


1. House ■ is at point __.
2. House ⊠ is at point __.
3. House ⧄ is at point __.
4. House □ is at point __.

Answer: 1.A 2.D 3.C 4.B

ITEM 1

Locate the boats by naming the points on the line.

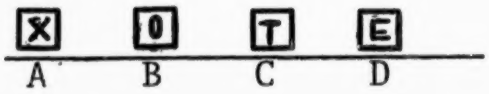


1. Boat ○ is at point __.
2. Boat ▽ is at point __.
3. Boat □ is at point __.
4. Boat ◇ is at point __.

Answer: 1.W 2.Z 3.X 4.Y

ITEM 2

Locate the boxes by naming the points on the line.

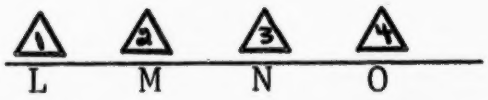


1. Box X is at point __.
2. Box O is at point __.
3. Box T is at point __.
4. Box E is at point __.

Answer: 1.A 2.B 3.C 4.D

ITEM 3

Locate the triangles by naming the points on the line.



1. △1 is at point __.
2. △2 is at point __.
3. △4 is at point __.
4. △3 is at point __.

Answer: 1.L 2.M 3.O 4.N

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 134 Grade 1-3

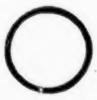
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Symmetry

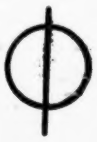
OBJECTIVE: Given a figure, the student will divide it into two parts so that it is symmetric.

SAMPLE ITEMS:

Draw a dotted line in the figure so that it is symmetric.

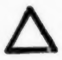


Answer:

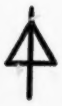


ITEM 1

Draw a dotted line in the figure so that it is symmetric.

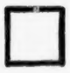


Answer:

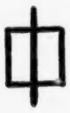


ITEM 2

Draw a dotted line in the figure so that it is symmetric.

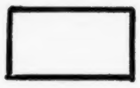


Answer:

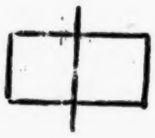


ITEM 3

Draw a dotted line in the figure so that it is symmetric.



Answer:



ITEM 4

IOX Acceptability Rating: 1 Math

Objective 135 Grade 1-3

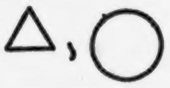
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Symmetry

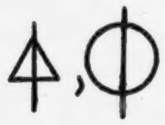
OBJECTIVE: Given a group of figures, the student will distinguish between those which have symmetry and those which do not by drawing the line of symmetry in those figures which have symmetry.

SAMPLE ITEMS:

Draw the line of symmetry in the figures which have symmetry.

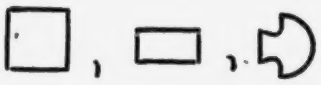


Answer:

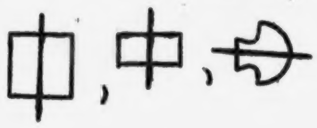


ITEM 1

Draw the line of symmetry in the figures which have symmetry.

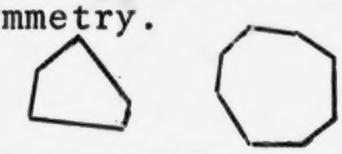


Answer:



ITEM 2

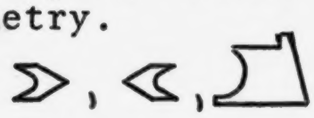
Draw the line of symmetry in the figures which have symmetry.



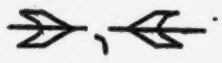
Answer: NONE

ITEM 3

Draw the line of symmetry in the figures which have symmetry.



Answer:



ITEM 4

IOX Acceptability Rating: 1

Objective 136

Math

Grade 1-3

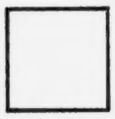
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Constructions: Circle, Square, Rectangle Triangle, Line Segment

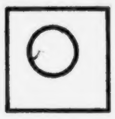
OBJECTIVE: Given specific directions, the student will make rough drawings of circles, squares, rectangles, triangles, and line segments.

SAMPLE ITEMS:

Draw a circle inside the square.

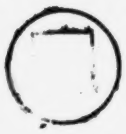


Possible answer:

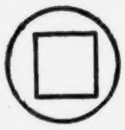


ITEM 1

Draw a square inside the circle.

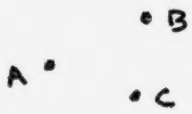


Possible answer:

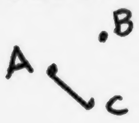


ITEM 2

Draw a line segment between any two of the points below.



Possible answer:



ITEM 3

Draw a rectangle.

Possible answer:

ITEM 4

IOX Acceptability Rating: 1

Math

Objective 137

Grade 2-3

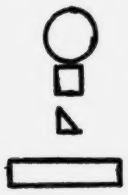
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Plane Geometric Figures:
Circle, Square, Rectangle, Triangle

OBJECTIVE: Given a group of models of plane geometric figures, the student will distinguish among these figures.

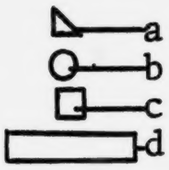
SAMPLE ITEMS:

Draw lines matching the figure to the correct name.



a. triangle
b. circle
c. square
d. rectangle

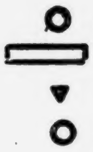
Answer:



a. triangle
b. circle
c. square
d. rectangle

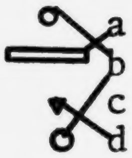
ITEM 1

Draw lines matching the figure to the correct name.



a. rectangle
b. circle
c. square
d. triangle

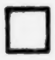
Answer:

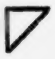


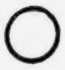
a. rectangle
b. circle
c. square
d. triangle

ITEM 2

Circle the triangle.

a. 

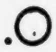
b. 

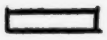
c. 

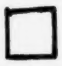
Answer: b.

ITEM 3

Circle the square.

a. 

b. 

c. 

Answer: c.

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 138 Grade 2-3

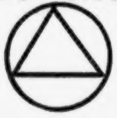
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Simple Closed Plane Figures

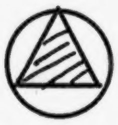
OBJECTIVE: Given a set of plane closed figures, the student will be able to identify their inside and outside regions.

SAMPLE ITEMS:

Color the triangle that is inside the circle.

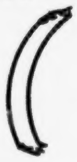


Answer:

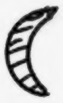


ITEM 1

Color the inside of the figure.

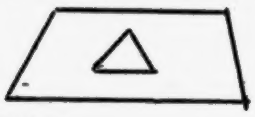


Answer:

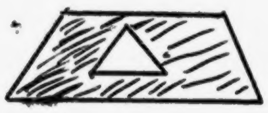


ITEM 2

Color the inside of the quadrilateral that is outside the triangle.

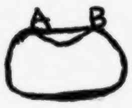


Answer:

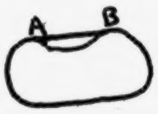


ITEM 3

Is the line segment $\overline{AB}$ inside or outside the figure?



Answer:



The line segment $\overline{AB}$ is outside the figure.

ITEM 4

IOX Acceptability Rating: 1

Math

Objective 139

Grade 2-3

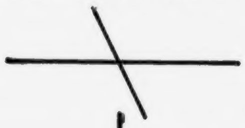
MAJOR CATEGORY: Geometry

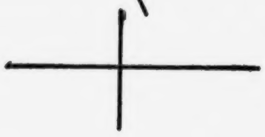
SUB-CATEGORY: Perpendiculars

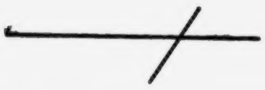
OBJECTIVE: Given pairs of line segments, the student will identify those which are perpendicular.

SAMPLE ITEMS:

Which of the pairs of line segments are perpendicular?

a.


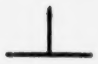
b.


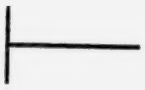
c.


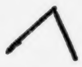
Answer: b

ITEM 1

Which of the pairs of line segments are perpendicular?

a.


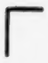
b.


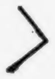
c.


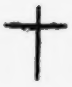
Answer: a, b

ITEM 2

Which of the pairs of line segments are perpendicular?

a.


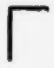
b.


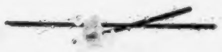
c.


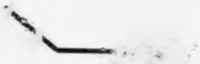
Answer: a, b, c

ITEM 3

Which of the pairs of line segments are perpendicular?

a.


b.


c.


Answer: a

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 140 Grade 2-3

MAJOR CATEGORY: Geometry

SUB-CATEGORY: Right Angles

OBJECTIVE: Given a set of figures, the student will identify those which contain a right angle.

SAMPLE ITEMS:

Which of the following contain right angles?

a.

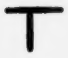
b.

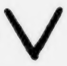
c.

Answer: a

ITEM 1

Which of the following contain right angles?

a. 

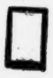
b. 

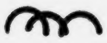
c.

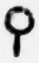
Answer: a, c

ITEM 2

Which of the following contain right angles?

a. 

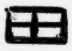
b. 

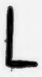
c. 

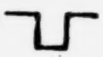
Answer: a

ITEM 3

Which of the following contain right angles?

a. 

b. 

c. 

Answer: a, b, c

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 141 Grade 2-3

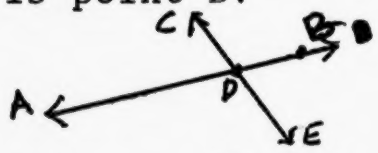
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Points, Lines, Line Segments

OBJECTIVE: Given intersecting lines and a point on one of the line segments, the student will name the line segment on which the point is found.

SAMPLE ITEMS:

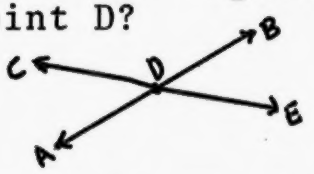
On what line segment(s) is point B?



Answer: $\overline{AB}$, $\overline{DB}$

ITEM 1

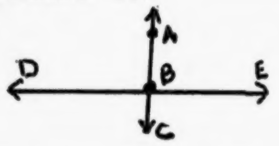
On what line segment(s) is point D?



Answer: $\overline{AB}$, $\overline{CE}$, $\overline{AD}$, $\overline{CD}$, $\overline{DB}$, $\overline{DE}$

ITEM 2

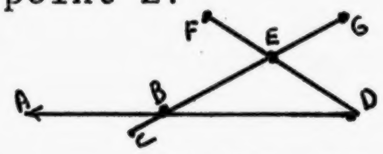
On what line segment(s) is point A?



Answer: $\overline{AB}$, $\overline{AC}$

ITEM 3

On what line segment(s) is point E?



Answer: $\overline{CE}$, $\overline{FE}$, $\overline{EG}$, $\overline{DE}$, $\overline{BE}$, $\overline{CG}$, $\overline{BG}$, $\overline{DF}$

ITEM 4

IOX Acceptability Rating: 1 Math

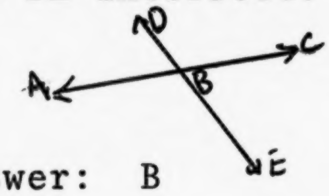
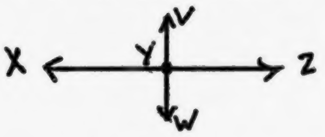
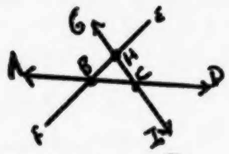
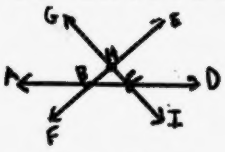
Objective 142 Grade 2-3

MAJOR CATEGORY: Geometry

SUB-CATEGORY: Points, Lines, Line Segments

OBJECTIVE: Given intersecting lines, the student will name the points of intersection.

SAMPLE ITEMS:

Name the point where $\overline{AC}$ and $\overline{DE}$ intersect.  Answer: B ITEM 1	Name the point where $\overline{VW}$ and $\overline{XZ}$ intersect.  Answer: Y ITEM 2
Name the point where $\overline{AD}$ and $\overline{GI}$ intersect.  Answer: C ITEM 3	Name the point where $\overline{EF}$ and $\overline{GI}$ intersect.  Answer: H ITEM 4

IOX Acceptability Rating: 1 Math

Objective 143 Grade 2-3

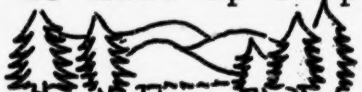
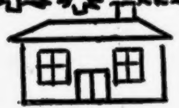
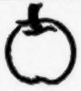
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Planes

OBJECTIVE: Given a group of pictures, the student will identify those that are made up of parts of planes.

SAMPLE ITEMS:

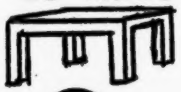
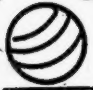
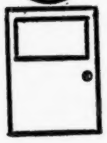
Circle the picture if it is made up of planes.

1. 
2. 
3. 

Answer: 2

ITEM 1

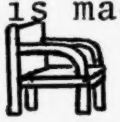
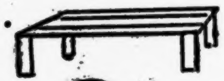
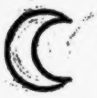
Circle the picture if it is made up of planes.

1. 
2. 
3. 

Answer: 1, 3

ITEM 2

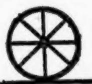
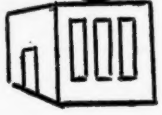
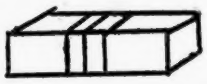
Circle the picture if it is made up of planes.

1. 
2. 
3. 

Answer: 1, 2

ITEM 3

Circle the picture if it is made up of planes.

1. 
2. 
3. 

Answer: 2, 3

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 144 Grade 2-3

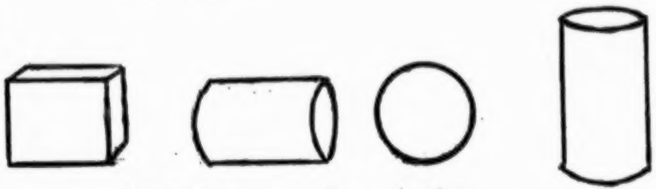
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Cubes, Spheres, Cylinders

OBJECTIVE: Given a set of 3-dimensional objects, the student will name them.

SAMPLE ITEMS:

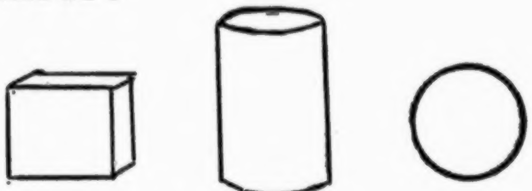
Write the name of each object next to its number.



Answer:
1. cube
2. cylinder
3. sphere
4. cylinder

ITEM 1

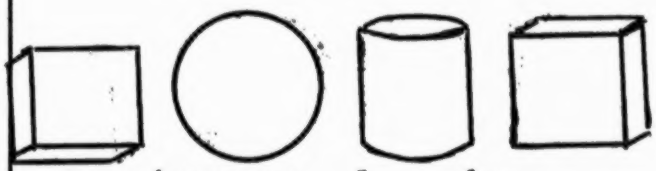
Write the name of each object next to its number.



Answer:
1. cube
2. cylinder
3. sphere

ITEM 2

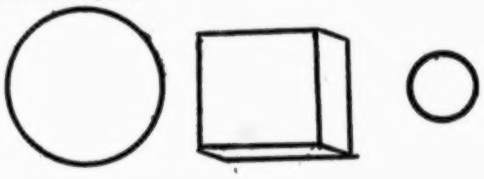
Write the name of each object next to its number.



Answer:
1. cube
2. sphere
3. cylinder
4. cube

ITEM 3

Write the name of each object next to its number.



Answer:
1. sphere
2. cube
3. sphere

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 145 Grade 2-3

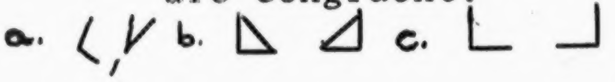
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Congruent Figures

OBJECTIVE: Given a set of pairs of geometric figures, the student will identify those pairs that have congruent figures.

SAMPLE ITEMS:

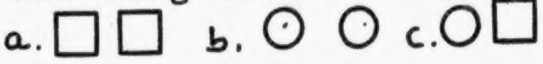
Circle the pairs of geometric figures that are congruent.



Answer: b, c

ITEM 1

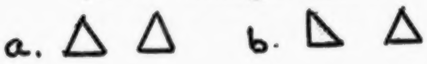
Circle the pairs of geometric figures that are congruent.



Answer: a, b

ITEM 2

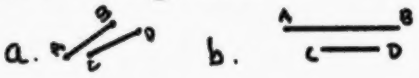
Circle the pair of geometric figures that are congruent.



Answer: a

ITEM 3

Circle the pair of geometric figures that are congruent.



Answer: a

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 146 Grade 3

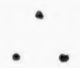
MAJOR CATEGORY: Geometry

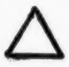
SUB-CATEGORY: Vertices (points) of Closed Figures

OBJECTIVE: Given a set of points, the student will connect the points so as to construct a simple closed curve.

SAMPLE ITEMS:

Connect the points to form a simple closed curve and then name the figure formed.

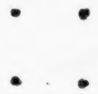


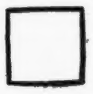
Answer: 

triangle

ITEM 1

Connect the points to form a simple closed curve and then name the figure formed.

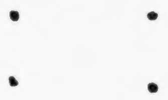


Answer: 

square

ITEM 2

Connect the points to form a simple closed curve and then name the figure formed.

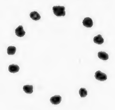


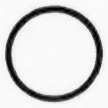
Answer:

rectangle

ITEM 3

Connect the points to form a simple closed curve and then name the figure formed.



Answer: 

circle

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 147 Grade 3

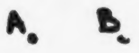
MAJOR CATEGORY: Geometry

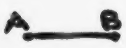
SUB-CATEGORY: Points and Line Segments

OBJECTIVE: Given points in a plane, the student will draw all possible line segments, list them, and state how many there are.

SAMPLE ITEMS:

Given 2 points, draw all possible line segments, list them, and state how many there are.



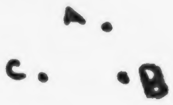
Answer: 

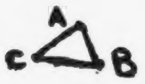
$\overline{AB}$

1

ITEM 1

Given 3 points, draw all possible line segments, list them, and state how many there are.



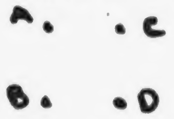
Answer: 

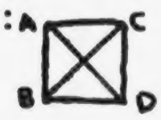
$\overline{AB}$, $\overline{BC}$, $\overline{AC}$

3

ITEM 2

Given 4 points, draw all possible line segments, list them, and state how many there are.



Answer: 

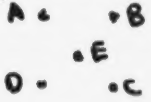
$\overline{AB}$, $\overline{AC}$, $\overline{AD}$,

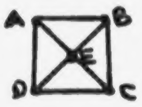
$\overline{BC}$, $\overline{BD}$, $\overline{CD}$

6

ITEM 3

Given 5 points, draw all possible line segments, list them, and state how many there are.



Answer: 

$\overline{AB}$, $\overline{AD}$, $\overline{AC}$, $\overline{AE}$, $\overline{BC}$,

$\overline{BD}$, $\overline{BE}$, $\overline{CE}$, $\overline{CD}$, $\overline{DE}$

10

ITEM 4

IOX Acceptability Rating: 1 — Math

Objective 148 — Grade 3

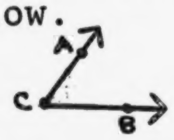
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Rays and Angles

OBJECTIVE: Given a geometrical figure, the student will name all angles and rays.

SAMPLE ITEMS:

Name all the rays and angles in the proper column for the figure below.



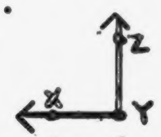
Rays Angles

Answer:

Rays	Angles
CA	ACB
CB	

ITEM 1

Name all the rays and angles in the proper column for the figure below.



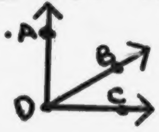
Rays Angles

Answer:

Rays	Angles
YX	XYZ
YZ	

ITEM 2

Name all the rays and angles in the proper column for the figure below.



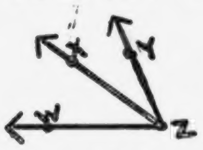
Rays Angles

Answer:

Rays	Angles
DA	ADB
DB	ADC
DC	BDC

ITEM 3

Name all the rays and angles in the proper column for the figure below.



Rays Angles

Answer:

Rays	Angles
ZX	XZY
ZW	XZW
ZY	WZY

ITEM 4

IOX Acceptability Rating: 1

Objective 149

Math

Grade 3

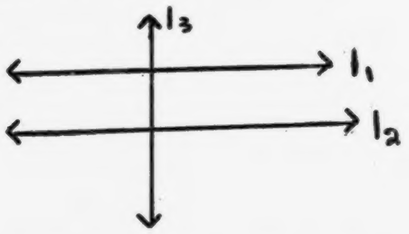
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Parallel Lines

OBJECTIVE: Given a set of lines in a plane, the student will identify those pairs of lines that are parallel.

SAMPLE ITEMS:

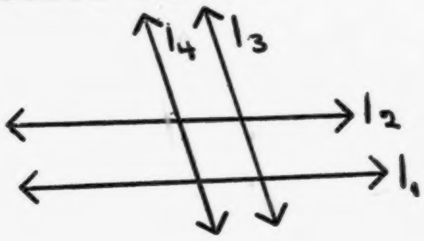
Name the pair(s) of parallel lines.



Answer: l_1 and l_2

ITEM 1

Name the pair(s) of parallel lines.

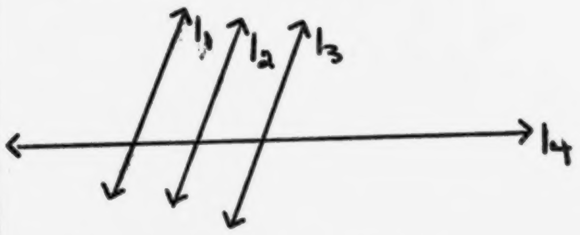


Answer: l_1 and l_2

l_3 and l_4

ITEM 2

Name the pair(s) of parallel lines.



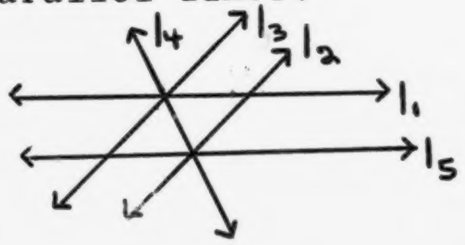
Answer: l_1 and l_2

l_1 and l_3

l_2 and l_3

ITEM 3

Name the pair(s) of parallel lines.



Answer: l_1 and l_5

l_2 and l_3

ITEM 4

IOX Acceptability Rating: 1

Math

Objective 150

Grade 3

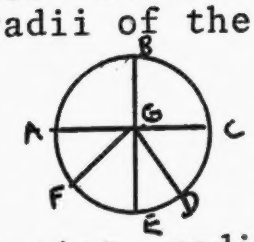
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Diameter and Radius

OBJECTIVE: Given a circle with line segments, the student will list the line segments that are the diameters and radii of the circle.

SAMPLE ITEM:

List under the proper column the line segments that are diameters and radii of the circle.



diameter radius

Answer:

diameter	radius	
$\overline{AC}$	$\overline{AG}$	$\overline{BG}$
$\overline{BE}$	$\overline{CG}$	$\overline{DG}$
	$\overline{EG}$	$\overline{FG}$

ITEM 1

IOX Acceptability Rating: 1 Math

Objective 151 Grade 3

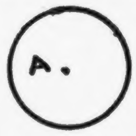
MAJOR CATEGORY: Geometry

SUB-CATEGORY: Diameter and Radius

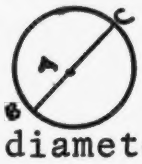
OBJECTIVE: Given a circle, the student will construct and name a diameter and a radius.

SAMPLE ITEMS:

Construct and name a diameter and a radius on the given circle.



Possible answer:

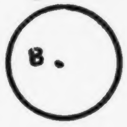


$\overline{BC}$ diameter

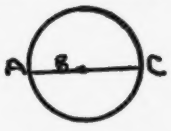
$\overline{AC}$ radius

ITEM 1

Construct and name a diameter and a radius on the given circle.



Possible answer:

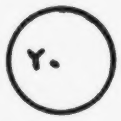


$\overline{AC}$ diameter

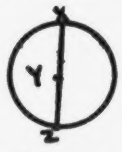
$\overline{AB}$ radius

ITEM 2

Construct and name a diameter and a radius on the given circle.



Possible answer:

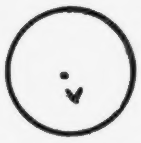


$\overline{XZ}$ diameter

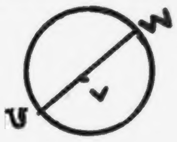
$\overline{XY}$ radius

ITEM 3

Construct and name a diameter and a radius on the given circle.



Possible answer:



$\overline{UW}$ diameter

$\overline{UV}$ radius

ITEM 4

IOX Acceptability Rating: 1 Math

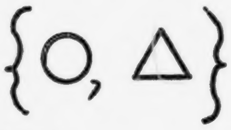
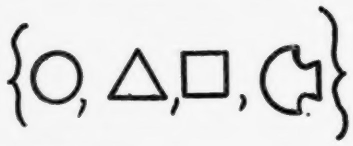
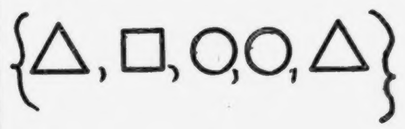
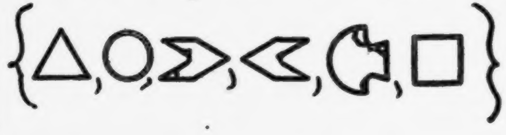
Objective 152 K - 3

MAJOR CATEGORY: Relations, Functions and Graphs

SUB-CATEGORY: Tally Marks

OBJECTIVE: Given a set of objects, the student will write a tally mark for each object in the set.

SAMPLE ITEMS:

Write a tally mark for each object in the set.  Answer: || ITEM 1	Write a tally mark for each object in the set.  Answer: //// ITEM 2
Write a tally mark for each object in the set,  Answer: 𝍸 ITEM 3	Write a tally mark for each object in the set.  Answer: 𝍸 | ITEM 4

IOX Acceptability Rating: 1

Math

Objective 153

Grade 1 - 3

MAJOR CATEGORY: Relations, Functions, and Graphs

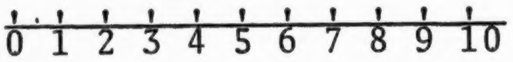
SUB-CATEGORY: Addition: Number Line

OBJECTIVE: Given a single-digit addition problem of not more than two addends, the student will find the sum using a number line.

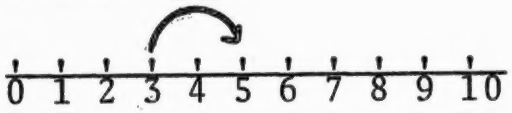
SAMPLE ITEMS:

Draw your move on the number line. Write the numeral in the ☐.

3 + 2 = ☐


0 1 2 3 4 5 6 7 8 9 10

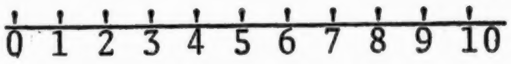
Answer: $\boxed{5}$


0 1 2 3 4 5 6 7 8 9 10

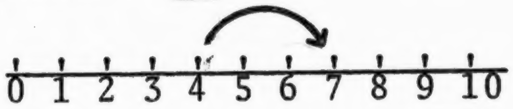
ITEM 1

Draw your move on the number line. Write the numeral in the ☐ .

4 + 3 =


0 1 2 3 4 5 6 7 8 9 10

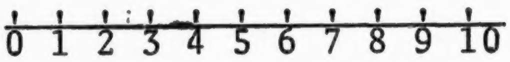
Answer: $\boxed{7}$


0 1 2 3 4 5 6 7 8 9 10

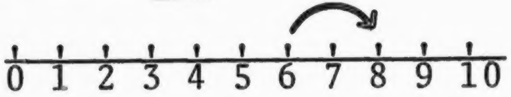
ITEM 2

Draw your move on the number line. Write the numeral in the ☐ .

6 + 2 =


0 1 2 3 4 5 6 7 8 9 10

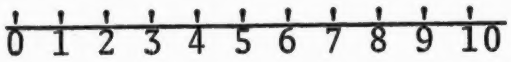
Answer: $\boxed{8}$


0 1 2 3 4 5 6 7 8 9 10

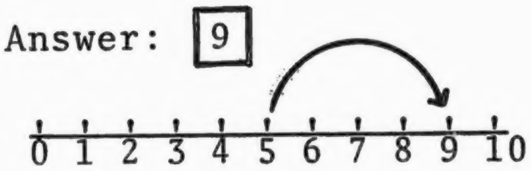
ITEM 3

Draw your move on the numeral line. Write the numeral in the ☐ .

5 + 4 =


0 1 2 3 4 5 6 7 8 9 10

Answer: $\boxed{9}$


0 1 2 3 4 5 6 7 8 9 10

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 154 Grade 1 - 3

MAJOR CATEGORY: Relations, Functions, and Graphs

SUB-CATEGORY: Plotting Points

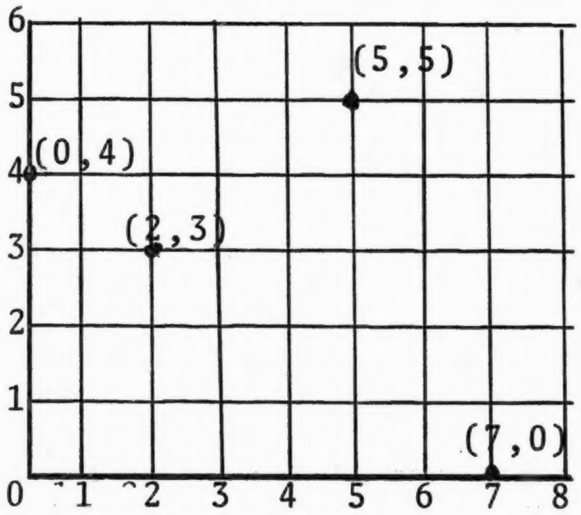
OBJECTIVE: Given a set of ordinal pairs, the student will plot their corresponding points on a coordinate system and vice versa.

SAMPLE ITEMS:

Plot the number pairs on the graph at right.

(2,3), (0,4), (5,5), (7,0)

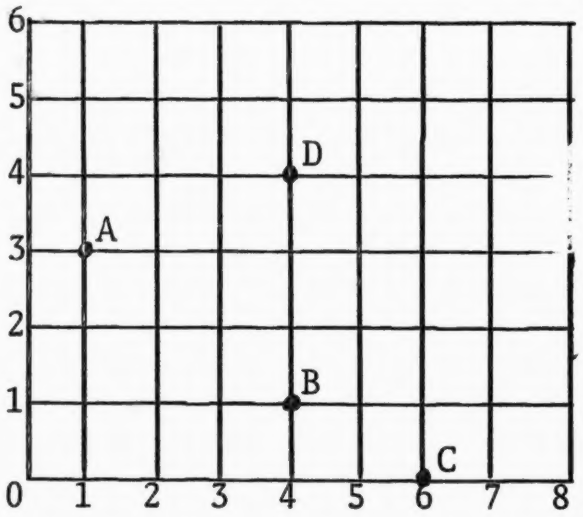
Answer: Shown



ITEM 1

State the number pairs of the points on the graph.

Answer:
A (1,3)
B (4,1)
C (6,0)
D (4,4)



ITEM 2

IOX Acceptability Rating: 1 | Math

Objective 155 | Grade 2 - 3

MAJOR CATEGORY: Relations, Functions, and Graphs

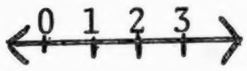
SUB-CATEGORY: Number Lines

OBJECTIVE: Given an inch-unit ruler, the student will construct a number line, labeling the points with whole numbers up to 20.

SAMPLE ITEMS:

Use a ruler to construct a number line showing 3 equivalent units. Label the units 0 to 3.

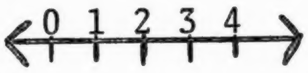
Possible Answer:



ITEM 1

Use a ruler to construct a number line showing 4 equivalent units. Label the units 0 to 4.

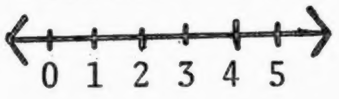
Possible Answer:



ITEM 2

Use a ruler to construct a number line showing 3 equivalent units. Label the units 0 to 5.

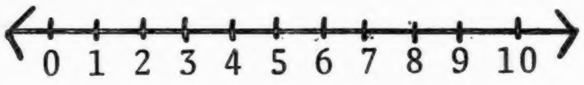
Possible Answer:



ITEM 3

Use a rule to construct a number line showing 10 equivalent units. Label the units 0 to 10.

Possible Answer:



ITEM 4

IOX Acceptability Rating: 1 Math

Objective 156 Grade 2 - 3

MAJOR CATEGORY: Relations, Functions, and Graphs

SUB-CATEGORY: Ordered Pairs

OBJECTIVE: Given a set of ordered pairs with some missing second elements, the student will state the rule for finding these missing elements.

SAMPLE ITEMS:

State the missing second elements in the ordered pairs and the rule for finding them.

{(3,4), (4,5), (5,a), (6,7), (8,x)}

Answer: a = 6, x = 9, second element = first element + 1

ITEM 1

State the missing second elements in the ordered pairs and the rule for finding them.

{(2,4), (3,5), (4,a), (5,7), (6,x)}

Answer: a = 6, x = 8, second element = first element + 2

ITEM 2

State the missing second elements in the ordered pairs and the rule for finding them.

{(7,5), (6,4), (5,x), (4,2), (3,y)}

Answer: x = 3, y = 1, second element = first element - 2

ITEM 3

State the missing second elements in the ordered pairs and the rule for finding them.

{(7,6), (6,5), (5,x), (4,3), (3,y)}

Answer: x = 4, y = 2, second element = first element - 1

ITEM 4

IOX Acceptability Rating: 1 Math

Objective 157 Grade 2 - 3

MAJOR CATEGORY: Relations, Functions and Graphs

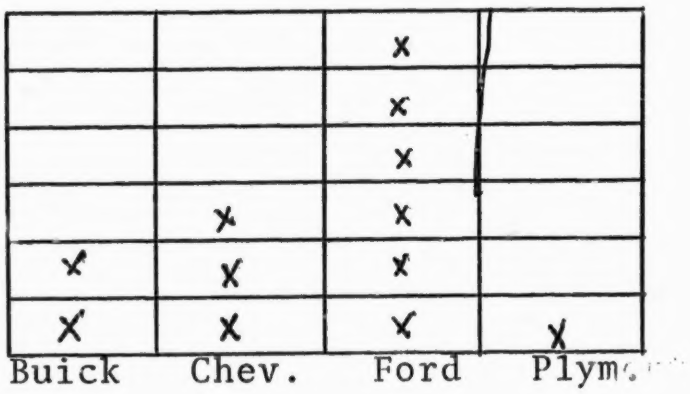
SUB-CATEGORY: Construct Pictograph

OBJECTIVE: Given related information, the student will construct a graph to represent the information pictorially.

SAMPLE ITEM:

Construct pictorially a graph representing the number of Buicks, Chevrolets, Fords, Plymouths passing in front of the school in a 5-minute period.

Possible Answer:



ITEM 1

IOX Acceptability Rating: 1 Math

Objective 158 Grade 2 - 3

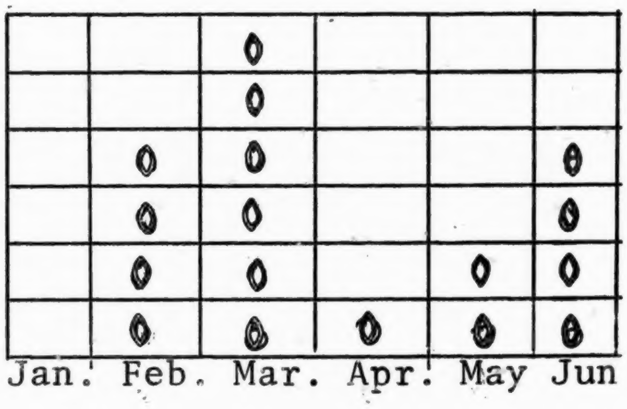
MAJOR CATEGORY: Relations, Functions and Graphs

SUB-CATEGORY: Pictographs

OBJECTIVE: Given a pictograph, the student will interpret it by answering related questions.

SAMPLE ITEM: Answer the following questions from the pictograph given: 0 = 5 quans.

1. How many quans were used in May?
2. What month used the most quans? How many?
3. What month had the least quans?



Answer:

1. 10
2. March; 30
3. January; 0

ITEM 1

IOX Acceptability Rating: 1 Math

Objective 159 Grade 3

MAJOR CATEGORY: Relations, Functions, and Graphs

SUB-CATEGORY: Subtraction: Number Line

OBJECTIVE: Given a single digit subtraction problem, the student will be able to find the difference using a number line.

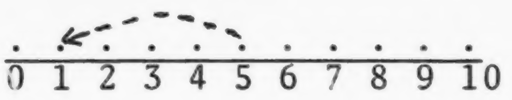
SAMPLE ITEMS:

Draw your move on the number line. Write the numeral in the ☐ .

5 - 4 = ☐

0 1 2 3 4 5 6 7 8 9 10

Answer: $\boxed{1}$



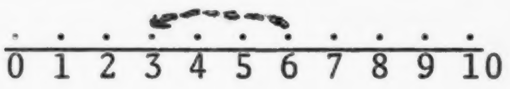
ITEM 1

Draw your move on the number line. Write the numeral in the ☐ .

6 - 3 = ☐

0 1 2 3 4 5 6 7 8 9 10

Answer: $\boxed{3}$



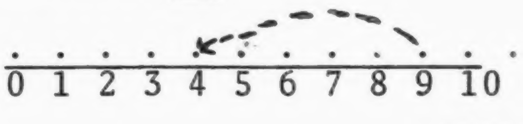
ITEM 2

Draw your move on the number line. Write the numeral in the ☐ .

9 - 5 = ☐

0 1 2 3 4 5 6 7 8 9 10

Answer: $\boxed{4}$



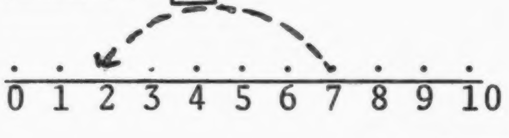
ITEM 3

Draw your move on the number line. Write the numeral in the ☐

7 - 5 = ☐

0 1 2 3 4 5 6 7 8 9 10

Answer: $\boxed{2}$



ITEM 4

IOX Acceptability Rating: 1 Math

Objective 160 Grade 3

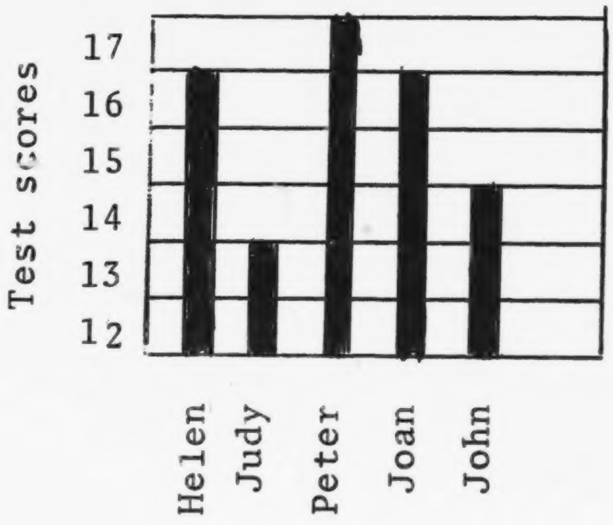
MAJOR CATEGORY: Relations, Functions and Graphs

SUB-CATEGORY: Bar Graphs

OBJECTIVE: Given a Bar Graph, the student will answer related questions.

SAMPLE ITEM: Answer the following questions about the test scores on the Bar Graph.

1. Who has the highest score?
2. Who has the lowest score?
3. Who have the same scores?



Answer:

1. Peter
2. Judy
3. Helen and Joan

ITEM 1

IOX Acceptability Rating: 1 Math
Objective 161 Grade 2-3

MAJOR CATEGORY: Probability & Statistics
SUB-CATEGORY: Range of Values

OBJECTIVE: Given a list of numbers, the student will order the list and state the range (highest and lowest) and median (middle).

SAMPLE ITEMS:

Put the following numbers in order and state the highest, middle, and lowest number.

6, 7, 5, 9, 8

Answer:
5 - lowest
6
7 - middle
8
9 - highest

ITEM 1

Put the following numbers in order and state the highest, middle, and lowest number.

17, 16, 15, 13, 14

Answer:
13 - lowest
14
15 - middle
16
17 - highest

ITEM 2

Put the following numbers in order and state the highest, middle, and lowest number.

15, 13, 17, 21, 19

Answer:
13 - lowest
15
17 - middle
19
21 - highest

ITEM 3

Put the following numbers in order and state the highest, middle, and lowest number.

75, 85, 70, 72, 89, 58, 59, 95, 99

Answer:
58 - lowest
59
70
72
75 - middle
85
89
95
99 - highest

ITEM 4

IOX Acceptability Rating: 1
Objective 162

Math
Grade 3

MAJOR CATEGORY: Probability & Statistics
SUB-CATEGORY: Outcomes

OBJECTIVE: Given a device, the student will toss it (or whatever action is appropriate), record the outcomes, and state what part of the outcome occurs.

SAMPLE ITEMS:

Flip a coin 50 times, record with tally marks the number of times the head and the tail appear, and state what part of the time each appears. Answer: Answers will vary. ITEM 1	Flip a coin 100 times, record with tally marks the number of times the head and the tail appear, and state what part of the time each appears. Answer: Answers will vary. ITEM 2
Place a white marble and a red marble in a box, pick a marble from the box and then put it back. Record with tally marks the number of times the red marble and the white marble appear after 50 drawings, and state what part of the time each appears. Answer: Answers will vary. ITEM 3	Place a white marble and a red marble in a box, pick a marble from the box and then put it back. Record with tally marks the number of times the red marble and the white marble appear after 100 drawings, and state what part of the time each appears. Answer: Answers will vary. ITEM 4

IOX Acceptability Rating: 1
Objective 163

Math
Grade 1-3

MAJOR CATEGORY: Application--Problem Solving

SUB-CATEGORY: Operations Necessary to Solve Problems

OBJECTIVE: Given a word problem, the student will state what operation is necessary to solve the problem.

SAMPLE ITEMS:

If Tony brought three apples to school on Monday and two on Tuesday, what operation must you perform to find out how many apples he brought on the two days?

Answer: Addition

ITEM 1

If Louis had 5 cookies, and he ate 3, what operation must you perform to find out how many cookies he had left?

Answer: Subtraction

ITEM 2

If Elvira had two dolls, and her mother gave her a new doll for her birthday, what operation must you perform to find out how many dolls Elvira has now?

Answer: Addition

ITEM 3

If Bobby had 10 gum drops, and he gave 5 gum drops to his friend Davis, what operation must you perform to find out how many gum drops Bobby had left?

Answer: Subtraction

ITEM 4

IOX Acceptability Rating: 1
Math

Objective 164
Grade 1-3

MAJOR CATEGORY: Application--Problem Solving

SUB-CATEGORY: Number Stories--One step

OBJECTIVE: Given a one-step number story, the student will write the number sentence to solve the problem.

SAMPLE ITEMS:

Ken made 3 airplanes. Joseph made 4 airplanes. How many airplanes did they make together?

Answer:
$$\begin{array}{r} 3 \\ +4 \\ \hline 7 \end{array}$$

ITEM 1

Chizuko baked 2 cakes. Yuriko baked 3 cakes. How many cakes did they bake together?

Answer:
$$\begin{array}{r} 2 \\ +3 \\ \hline 5 \end{array}$$

ITEM 2

Dolores baked 15 cookies. Art ate 5 of the cookies. How many cookies were left?

Answer:
$$\begin{array}{r} 15 \\ -\ 5 \\ \hline 10 \end{array}$$

ITEM 3

Dewey had 6 marbles, and he gave 3 to Lee. How many marbles did Dewey have left?

Answer:
$$\begin{array}{r} 6 \\ -3 \\ \hline 3 \end{array}$$

ITEM 4

IOX Acceptability Rating: 1

Math

Objective 165

Grade 2-3

MAJOR CATEGORY: Application--Problem Solving

SUB-CATEGORY: Drawing Diagrams to Help Solve Word Problems

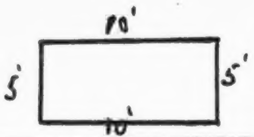
OBJECTIVE: Given a word problem, the student, where possible, will draw a diagram of the problem and then solve it.

SAMPLE ITEMS:

Draw a diagram and then solve the problem.

Find the distance around a rectangle which is 10 feet long and 5 feet wide.

Answer: 30 ft.

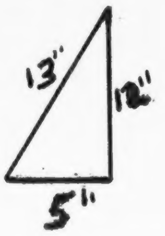


ITEM 1

Draw a diagram and then solve the problem.

Find the distance around a triangle whose sides are 5 inches long, 12 inches long, and 13 inches long.

Answer: 16 in.

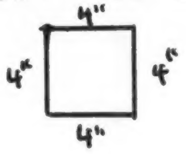


ITEM 2

Draw a diagram and then solve the problem.

Find the distance around a square of which one side is 4 inches long.

Answer: 16 in.

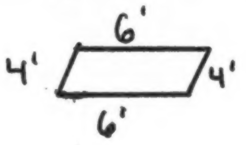


ITEM 3

Draw a diagram and then solve the problem.

Find the distance around a parallelogram which is 6 feet long and 4 feet wide.

Answer: 20 ft.



ITEM 4

IOX Acceptability Rating: 1　　Math

Objective 166　　Grade 2-3

MAJOR CATEGORY: Application--Problem Solving

SUB-CATEGORY: Many Ways to Solve a Problem

OBJECTIVE: Given a word problem, the student will solve it in more than one way.

SAMPLE ITEMS:

Solve the problem in two ways and write the number sentences for each way.

Lee Wong got 4 balloons from his mother and 3 balloons from his father. He gave his sister 2 of them. How many balloons does he have now?

Answer:

$$\begin{array}{r} 4 \\ +3 \\ \hline 7 \\ -2 \\ \hline 5 \end{array} \qquad \begin{array}{r} 4 \\ -2 \\ \hline 2 \\ +3 \\ \hline 5 \end{array}$$

ITEM 1

Solve the problem in two ways and write the number sentences for each way.

Pablo bought 4 pieces of candy, and his friend Art gave him 2 pieces of candy. How much candy will Pablo have left if he gives 3 pieces to his grandmother?

Answer:

$$\begin{array}{r} 4 \\ +2 \\ \hline 6 \\ -3 \\ \hline 3 \end{array} \qquad \begin{array}{r} 4 \\ -3 \\ \hline 1 \\ +2 \\ \hline 3 \end{array}$$

ITEM 2

Solve the problem in two ways and write the number sentences for each way.

Sally baked 12 cookies, and her friend Phyllis baked 12 cookies. How many cookies will they have left if they give 10 to their friend Lois?

Answer:

$$\begin{array}{r} 12 \\ +12 \\ \hline 24 \\ -10 \\ \hline 14 \end{array} \qquad \begin{array}{r} 12 \\ -10 \\ \hline 2 \\ +12 \\ \hline 14 \end{array}$$

ITEM 3

IOX Acceptability Rating: 1 Math

Objective 167 Grade 2-3

MAJOR CATEGORY: Application--Problem Solving

SUB-CATEGORY: Estimation

OBJECTIVE: Given a word problem, the student will both estimate and give the correct answer.

SAMPLE ITEMS:

Estimate the answer by rounding the numbers and also give the correct answer.

Art said his camera cost $6.95 and the flash gun for his camera cost $2.17. What was the total cost?

Answer:

Estimation	Actual
$6.95 rounded to $7.00	$6.95
+2.17 rounded to 2.00	+2.17
$9.00	$9.12

ITEM 1

Estimate the answer by rounding the numbers and also give the correct answer.

Diana bought a doll for $3.75 and an extra doll dress for $1.20. What was the total cost?

Answer:

Estimation	Actual
$3.75 rounded to $4.00	$3.75
+1.20 rounded to 1.00	+1.20
$5.00	$4.95

ITEM 2

Estimate the answer by rounding the numbers and also give the correct answer.

Billy bought an airplane model for $2.40 and a tube of airplane glue for 75¢. What was the total cost?

Answer:

Estimation	Actual
$2.40 rounded to $2.00	$2.40
.75 rounded to 1.00	+ .75
$3.00	$3.15

ITEM 3

IOX Acceptability Rating: 1

Math

Objective 168

Grade 2-3

MAJOR CATEGORY: Application--Problem Solving

SUB-CATEGORY: Number Stories--Two step

OBJECTIVE: Given a two-step number story, the student will write the number sentences to solve the problem.

SAMPLE ITEMS:

Write the number sentences to solve the problem.

Chizuko and her mother bought clothes for school. They spent $4.10 for a blouse and $8.50 for a skirt. How much did they spend? How much change would they get from a $20 bill?

Answers:	$4.10	$20.00
	+8.50	-12.60
	$12.60	$ 7.40

ITEM 1

Write the number sentences to solve the problem.

Virgil and his brother Hugo bought 2 comic books for 30¢ and 2 pieces of bubble gum for 2¢. How much did they spend. How much change would they get from a dollar?

Answers:	$ .30	$1.00
	+ .02	- .32
	$ .32	$ .68

ITEM 2

Write the number sentences to solve the problem.

Lois bought a box of candy for $2.25 to give to her brother Art for his birthday and a birthday card for 30¢. How much did she spend? How much change would she get from a $5 bill?

Answers:	$2.25	$5.00
	+ .30	-2.55
	$2.55	$2.45

ITEM 3

IOX Acceptability Rating: 1

Math

Objective 169

Grade 3

MAJOR CATEGORY: Application--Problem Solving

SUB-CATEGORY: Evaluation for Reasonableness

OBJECTIVE: Given a word problem with a set of answers, the student will choose the best answer.

SAMPLE ITEMS:

Choose the best answer to the problem.

Some airplanes travel about 6 miles above the ground. About how many feet is 6 miles?

a. 3,000 ft.
b. 30,000 ft.
c. 300 ft.

Answer: b

ITEM 1

Choose the best answer to the problem.

A tree in front of Johnny's bedroom window is about 4 yards above the ground. About how many inches is 4 yards?

a. 140 in.
b. 160 in.
c. 180 in.

Answer: a

ITEM 2

Choose the best answer to the problem.

Jimmy's motor bike can go 5 miles an hour. About how many feet is 5 miles?

a. 13,000 ft.
b. 20,000 ft.
c. 26,000 ft.

Answer: c

ITEM 3

Choose the best answer to the problem.

Mary's mother bought 15 yards of material at a sale. About how many inches are in 15 yards?

a. 100 in.
b. 200 in.
c. 300 in.

Answer: a

ITEM 4

IOX Acceptability Rating: 1

Math

Objective 170

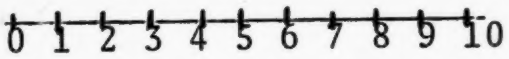
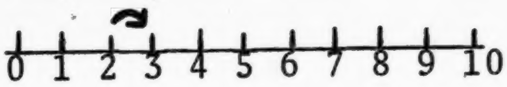
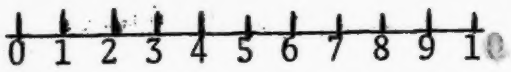
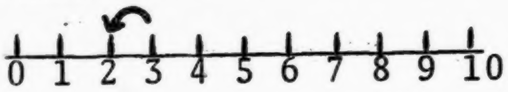
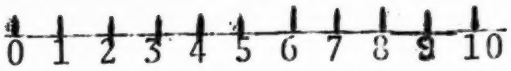
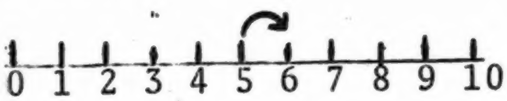
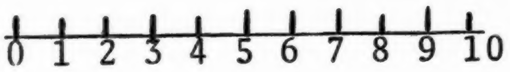
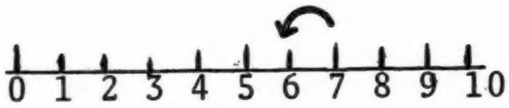
Grade K-1

MAJOR CATEGORY: Mathematical Sentences - Order, Logic

SUB-CATEGORY: One More Than...., One Less Than...,

OBJECTIVE: Given a number line with points 0-10, the student will write the numeral that is "one more than" and the numeral that is "one less than" a given point.

SAMPLE ITEMS:

ITEM 1	ITEM 2
Name the cardinal number that is "one more than" the given point. Show your move on the number line. Given: 2  0 1 2 3 4 5 6 7 8 9 10 Answer: 3  0 1 2 3 4 5 6 7 8 9 10	Name the cardinal number that is "one less than" the given point. Show your move on the number line. Given: 3  0 1 2 3 4 5 6 7 8 9 10 Answer: 2  0 1 2 3 4 5 6 7 8 9 10
Name the cardinal number that is "one more than" the given point. Show your move on the number line. Given: 5  0 1 2 3 4 5 6 7 8 9 10 Answer: 6  0 1 2 3 4 5 6 7 8 9 10	Name the cardinal number that is "one less than" the given point. Show your move on the number line. Given: 7  0 1 2 3 4 5 6 7 8 9 10 Answer: 6  0 1 2 3 4 5 6 7 8 9 10
ITEM 3	ITEM 4

IOX Acceptability Rating: 1 Math

Objective 171 Grade 1 - 3

MAJOR CATEGORY: Mathematical Sentences - Order, Logic

SUB-CATEGORY: "One more than"...."one less than"

OBJECTIVE: The student will write the number that is "one more than" or "one less than" a given number.

SAMPLE ITEMS:

Write the cardinal number that is "one more than", or "one less than" in the ☐.

1. One more than 2 is ☐.
2. One more than 8 is ☐.
3. One less than 7 is ☐.
4. One less than 9 is ☐.

Answer:

1. $\boxed{3}$
2. $\boxed{9}$
3. $\boxed{6}$
4. $\boxed{8}$

ITEM 1

IOX Acceptability Rating: 1 Math

Objective 172 Grade 1 - 3

MAJOR CATEGORY: Mathematical Sentences-
Order, Logic

SUB-CATEGORY: >, < =

OBJECTIVE: Given a closed mathematical sentence with the missing order symbol, the student will indicate the proper relationship by supplying the correct symbol.

SAMPLE ITEMS:

Supply the symbol >, <, or = to make the sentence true.

1. 8 + 6 — 6 + 6
2. 4 + 4 — 2 + 6
3. 0 + 5 — 3 + 2
4. 1 + 2 — 2 + 2
5. 10 + 4 — 9 + 6

Answer:

1. >
2. =
3. =
4. <
5. <

ITEM 1

IOX Acceptability Rating: 1

Objective 173

Math

Grade 1-3

MAJOR CATEGORY: Mathematical Sentences - Logic, Order

SUB-CATEGORY: True and False Sentences

OBJECTIVE: Given a closed sentence, the student will state whether it is true or false.

SAMPLE ITEM: Write "true" or "false" for each number sentence.

1. $5 + 4 \neq 3 + 7$
2. $5 > 2 + 3$
3. $6 + 2 < 5 + 3$
4. $6 + 3 < 4 + 14$
5. $3 + 3 > 1 + 3$

Answer:

1. true
2. false
3. false
4. true
5. true

ITEM 1

IOX Acceptability Rating: 1

Math

Objective 174

Grade 1 - 3

MAJOR CATEGORY: Mathematical Sentences - Order, Logic

SUB-CATEGORY: Open Sentences

OBJECTIVE: Given an open number sentence, the student will fill in the missing value to make the sentence true.

SAMPLE ITEMS:

Write in a value to make the number sentence true.

1. $5 + \_\_ \neq 6 + 4$
2. $7 + 2 < \_\_$
3. $9 + \_\_ = 13$
4. $1 + \_\_ > 3 + 2$

Answer:

1. any number except 5
2. any number > 9
3. 4
4. any number > 4

ITEM 1

PROBE Guiding Committee

Marvin C. Alkin — Director, Center for the Study of Evaluation; Associate Professor, Graduate School of Education, UCLA.

Eva L. Baker — Assistant Professor, Graduate School of Education, UCLA.

Madeline Hunter — Principal, University Elementary School, UCLA.

Ronald G. McIntire — Executive Officer, Project for Research on Objective Based Evaluation (PROBE).

W. James Popham — Associate Professor, Graduate School of Education, UCLA.

Rodney W. Skager — Associate Professor, Graduate School of Education, UCLA.

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